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Get *Gorgeous* as the 808-ers state their latest music-making techniques

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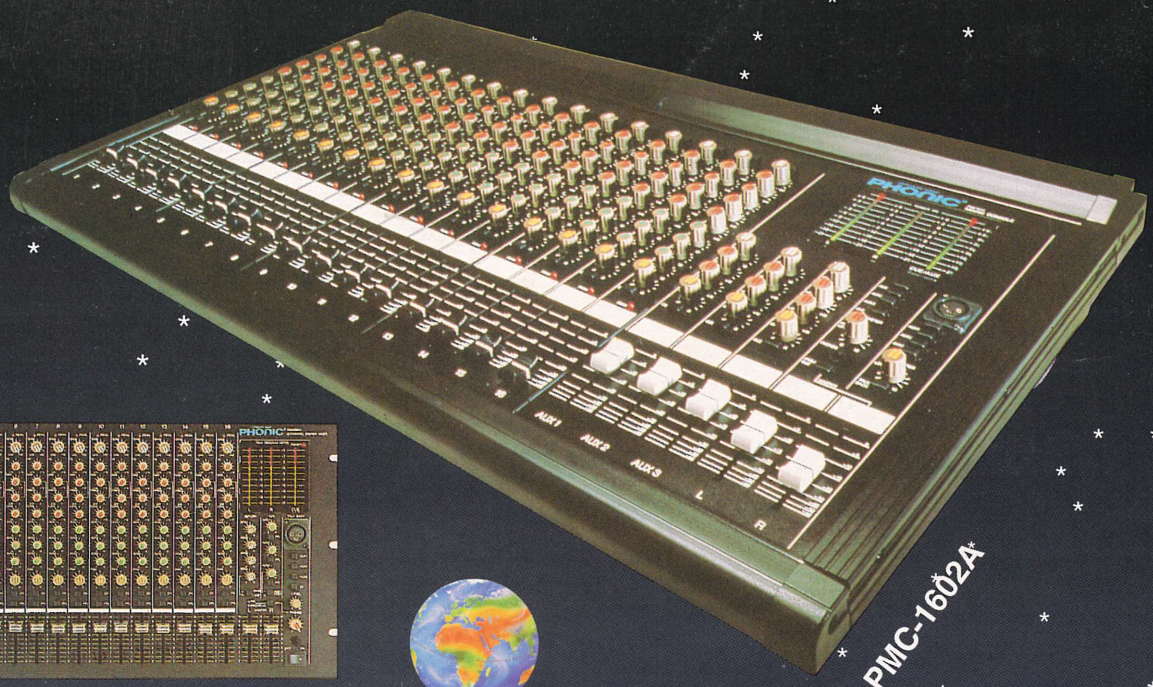
Is this machine for you? Read our review

KURZWEIL K2000R
Rack it up, try it out. We give you the gen

CAKEWALK PRO
The PC sequencer that combines MIDI and Wave file manipulation

ENSONIQ ASR10

ISSUE 7
MAY 1993
£2.25



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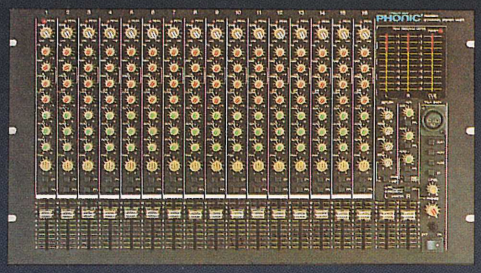

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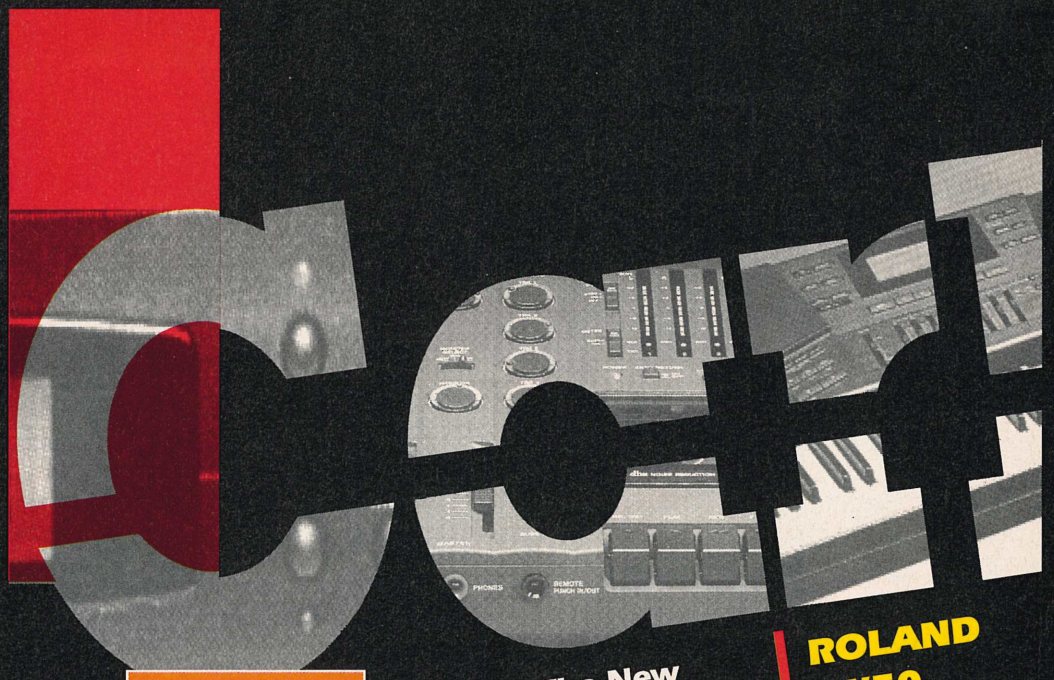

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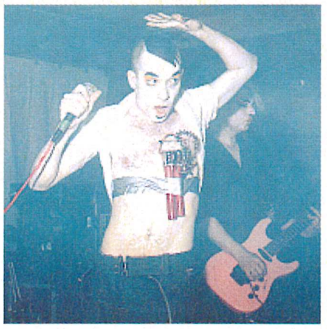

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Product name
What it does
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Verdict
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A brief assessment of the product overall, a summary of its best and worst points, and possibly an indication of what to use it for.

80+% means a particularly excellent product.
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60+% means good, but a few shortcomings.
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Not that we want to stifle your own creativity. With 317 onboard sounds, plus 9 rhythm set-ups and 37 special sound effects you may just as easily use the built-in 46,000 note sequencer to write your own hits. Especially as the JW-50 has 30 built-in music styles from Rock'n'Roll to House, from Dixie to Dance (with more available as an optional extra) and 140 chords sets to make it easier for you to get the groove going.

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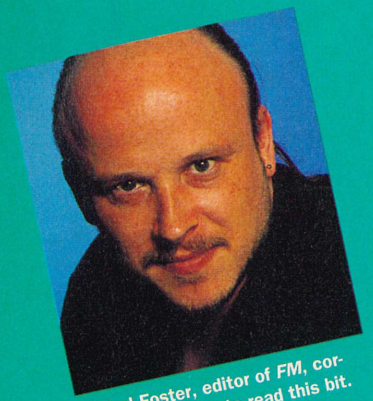
Welcome



◆ Karl Foster, editor of *FM*, cordially invites you to read this bit.

Here we are yet again with another shiny, new, informative and entertaining *FM*. It's a pretty packed issue this month, with sterling profiles on two happening acts: 808 State, who have recently been out on tour in the UK promoting their *Gorgeous* album, and Sheep On Drugs, who've taken time out from a hectic live schedule to fill you in on how they bring their wild, post-acid sound to the stage.

Anyone who is looking to upgrade their existing music computing setup, or is a newcomer to the field, should find just the info they're looking for in our appraisal of the various computers available. It's a devil of a job choosing which platform is right for you, which is why we've taken the words of some leading experts to help explain the capabilities of each machine.

And there's the usual up-to-the-minute reviews on all the latest music gear, along with the star of this month's Retro slot, Roland's classic TB-303 bass machine.

Actually, there's something you could do for us this month. On page 63 you'll find a questionnaire – please take the time to fill it in because it'll help us fine-tune future issues of the magazine to serve your needs more efficiently. And you could win a superb Yamaha PSR5700 keyboard worth £1,599, so give it a go. Oh, and have a smashing read, y'hear.

Hard hat music

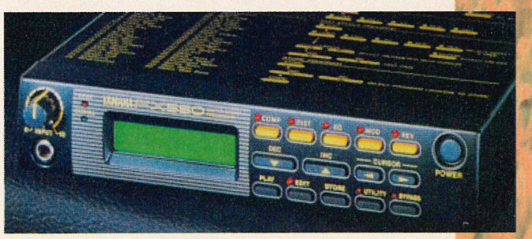
Leisure software publisher Electronic Arts is planning to release a new music product at the Amiga Format Live show at Wembley Conference Centre in May . The program is an updated version of the Amiga music tool, *Deluxe Music Construction Set*, which has been drastically revamped to make use of the power of the new machines.

Changes include the facility to utilise the new AGA modes, open multiple documents, import and export MIDI files, assign any MIDI channel or instrument name to a track, define macros for custom operations and integrate fully into ARexx. The price of the package will be revealed at the show.

◆ *Deluxe Music Construction Set* Version 2.0 £TBA
Electronic Arts Tel: 0753 549442

Yamaha goes new-kit crazy

A wealth of new products unveiled by high-tech giant at Frankfurt music show.



◆ The new Yamaha FX550 features improved distortion for axe-wielding maniacs – sure beats lugging a Marshall stack up the stairs, but looks nowhere near as butch.

Report by Karl Foster

Yamaha bucked the trend in the recession-hit music-kit market by launching new gear across its pro-audio product range at the recent Frankfurt Music Messe.

For recording buffs the new MT8X 8-track cassette multi-tracker was on demo, showing its double-speed drive, 40Hz to 15kHz 13-channel mixer, two auxiliary ins and outs, dbx noise reduction and competitive £1,199 price tag. There was also the SPX990 multi effects processor equipped with 20-bit (better than CD quality) analogue to digital (and the other way round) converters, an external RAM card slot, intelligent pitch change effects and featuring improved editing facilities and reverb algorithms over its predecessor, the SPX900. And it sports a new, improved price tag of £739.

Still on the effects front, guitarists and adventurous synthesists could firtle with the new FX550 multi-effects processor – the replacement for the FX500 and featuring improved distortion ("honest, it's better than a Marshall, guv"), an amp simulator so it can be plugged directly into a mixing desk without miking up, and pitch shift, all for £349.

Still for guitarists is the £599 GW50 'guitar performance effector', a curious device that incorporates 50 effects programs and a sequencer/tone module along the lines of the QY10 walkstation. Just the ticket for guitarists wanting to play along to a custom synth backing.

Taking the sequencing theme a step further, the QR10 music accompaniment player is a £279 auto-arranger that doesn't require any keyboard skills to program. It has AWM (sampled) tone generation, 69 pitched voices, 60 percussion voices, two sampled voices, 28-note polyphony, loads of pre-defined rhythm patterns and can even sample for up to 3.2 seconds.

Staying with low-end music applications, the new 10W MS101II and 20W MS202II powered speakers replace the former MS101/202 models, offering increased tonal control and sound quality at £99 and £169 respectively. And there was also the £285 GQ2015 stereo 15-band graphic equaliser, a 1U-high unit with balanced Ins and Outs and switchable I/O levels. Mmm, lovely.

◆ Yamaha-Kemble Tel: 0908 366700

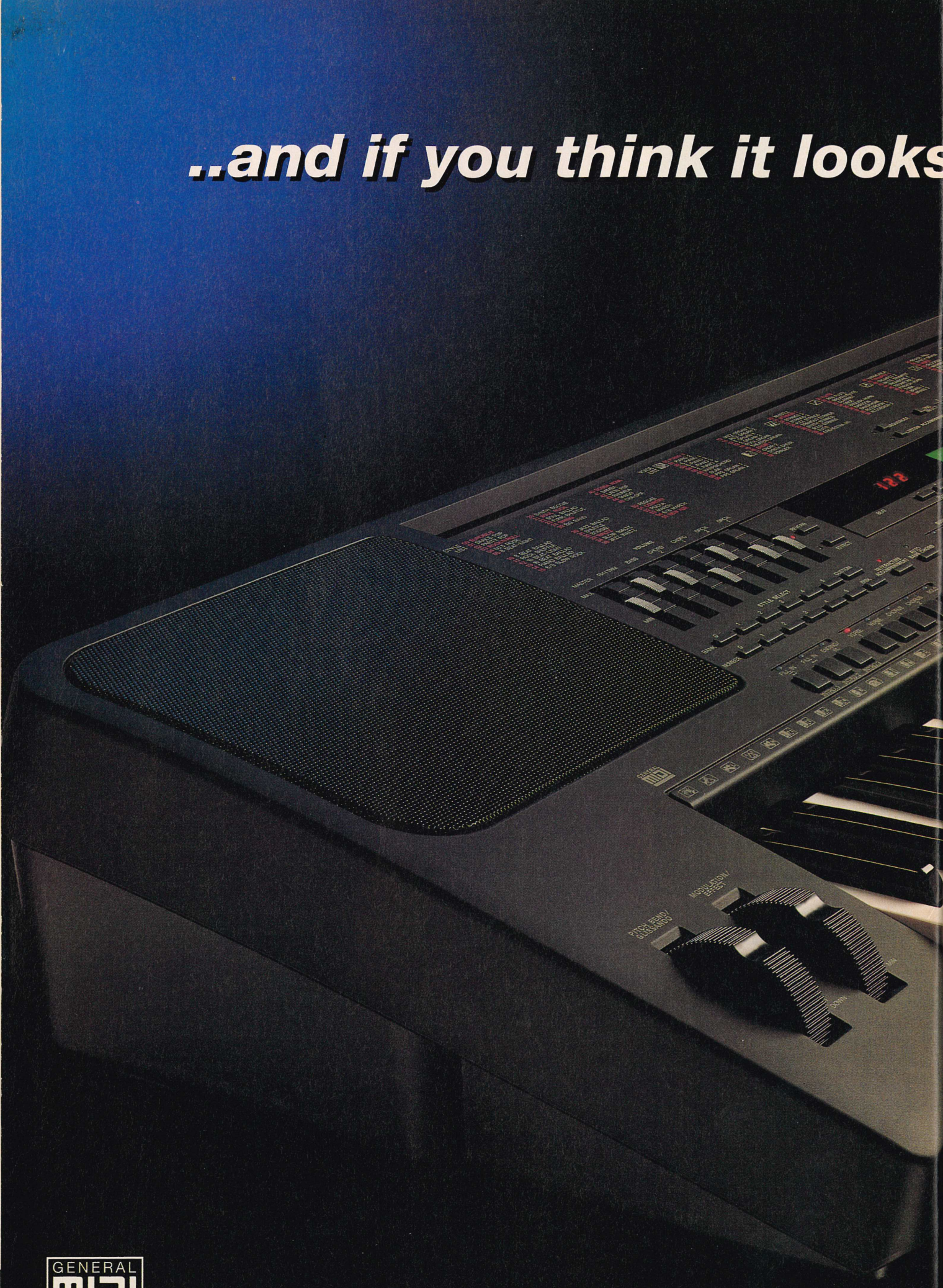
◆ Desktop music is adequately catered for by the new MS101II and MS202II powered speakers – they offer 10W and 20W of power respectively.

Hello! to desktop Music!

A new Yamaha package aimed at getting people started in computer composition looks likely to add impetus to the tech music scene. Yamaha has been involved in the computer field for some time, with specific sound chips for the Sound Blaster Pro soundcard for PCs, but the company has branched out with a new integrated package called Hello! Music! (yes, they've gone overboard on exclamation marks) and aims to bring new people into the desktop music fold.

The package, anticipated to come in at around £349, features the General-MIDI-compatible CBX-T3 tone generator, with 16-voice multi-timbrality and 28-note polyphony, Steinberg's *Lite* and *MIDI Play* software plus PC/Mac cabling. The company is also investigating support for the Archimedes. Optional extras include CBX-S3 10 Watt powered speakers, at £200 a pair, and a CBX-K3 MIDI keyboard at about £240. Hello! Music! will be available from July.

..and if you think it looks



GENERAL

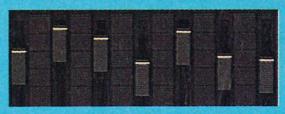
YAMAHA PSR-5700

good, just wait 'til you hear it

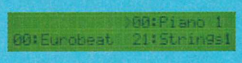
A picture paints a thousand words.

Sadly none of them comes close to describing the breathtaking sound quality of the new Yamaha PSR-5700.

So, for a while we'll wax lyrical on the hardware.



The intuitive mixer panel for example, that lets you balance the volume levels of individual instruments as you play.



Or the bright, easy to read display, helping you and the PSR-5700 work together in perfect harmony.

The built-in disk drive that offers unlimited storage and access to a massive library of style and accompaniment software, including Yamaha's own Disk Orchestra Collection.

And Super Styleplay, digital signal processing plus user-friendly multi-function pads.

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Commodore launches new Amiga

Commodore makes in-roads on the music market with special Amiga bundles.

◆ Commodore's Amiga 4000 040, big brother to the newly announced A4000 030 which is being targeted at desktop musicians.

Report by Maff Evans

Details of a new mid-priced Amiga to be bundled with music hard and software have been announced by Commodore. The new machine, the Amiga 4000 030, is based on the same technology as the high-end Amiga 4000 040, but with several significant changes..

The new machine shares the same 32-bit architecture as both the 4000 040 and the 68020-based 1200, but features four megabytes of on-board RAM, a high density disk drive and a 25 MHz 68030 as its central processor. This means that it runs faster than the 1200, but not at the same rate of knots as the fully-fledged 68040 version of the 4000. The Advanced Graphics Architecture (AGA) chipset has been included, giving a palette of over 16 million colours to choose from, with the facility to display 256,000 on-screen at the same time. The casing will be the same as the 4000 040, which means that internal expansion boards (for digital recording or 24-bit image processing, for example) can be added.

Musicians will be particularly glad to learn of the software bundles available. As well as the standard machines (with a hard drive), an option to have the One Stop Music Shop sound card included will be on offer. You can also buy the machine with programs such as *Bars and Pipes Pro 2, SuperJAM 1.1* and *Scala*. Prices for the bundles have not quite been finalised, but Commodore has released provisional prices that shouldn't differ too much from the final retail prices.

The new 4000 030 is being touted as the perfect machine for multi-media applications, with demonstrations at the presentation from Realtime Graphics (designers of the graphics for such TV shows as Channel 4's *Games-Master*), *TV Paint* (24-bit graphics system), *Real 3D* (high-powered 3D modelling, ray-tracing and animation system), Blue Ribbon Soundworks (home of *Bars and Pipes* and *SuperJAM*) and Scala UK (multimedia authoring specialist).

Commodore's multi-media sales manager, Mike Gosheron, is confident that the 4000 030 will do well. He says, "There's never been a better time for professionals and enthusiasts to explore the formidable computing power of high-end Amigas."

◆ Commodore's Mike Gosheron is confident of success for the 4000 030.

Blue Ribbon's Andy Bishop was similarly enthusiastic: "The true multi-tasking capabilities of the Amiga and the ability to expand and use the system are way beyond what any other machine can do. There's no other platform on the market that gives you the opportunities and abilities that the Amiga has to offer."

At the price (see below), there is little to compete with the new package, so the long line of software support for the previous Amiga range should continue, taking it firmly into the realms of the professional engineer, designer, producer or musician.

Provisional price guide:

◆ Amiga 4000 030 with 80Mb hard drive, £999

◆ Amiga 4000 030 with 120Mb hard drive, £1099

Bundle prices (all include Amiga 4000 030 with 80Mb hard drive):

◆ Amiga + One Stop Music Shop board + *SuperJAM 1.1*, £1,250 (approx)

◆ Amiga + One Stop Music Shop board + *Bars and Pipes Pro 2*, £1,300 (approx)

◆ Amiga + One Stop Music Shop board + *Bars and Pipes Pro 2 + Scala*, £1,500 (approx)

◆ Commodore UK, The Switchback, Gardner Rd, Maidenhead, Berks SL6 7XA Tel: 0628 770088

Atari ST £90 price crash

That most musical of computers, the Atari 520STFM, is to drop in price from £249 to £159. And there are rumours, though currently unconfirmed, that the 520STE and 1040STE are to have their price tags cut by £50 each during 1993.

Atari believes the price cut will help it sell 150,000 units of the ageing 16-bit STFM by the end of the year, a machine that was on the verge of being dropped in favour of the company's new 32-bit Falcon.

◆ A price drop for the Atari 520STFM could see the

It comes as good news for musicians keen to get into desktop music – the STFM has featured in high-tech studios for many years, primarily because of its price, power and built-in MIDI interface, and is widely supported by software manufacturers. This ensures no shortage of top-notch music programs.

Atari marketing manager Darryl Still, talking to *FM*'s sister magazine *ST Format*, explained the move: "We were thinking of using all our production capabilities on newer machines like the Falcon, but the market convinced us that there is room for an entry-level computer that is a considerable step up from things like the C64 and Spectrum."

He added that the STFM is likely to be around for at least the next three or four years.

Turbo power for GEM

GEM S2 and S3 workstation owners can boost the performance of their keyboards with a new Turbokit.

The plug-in device provides 500 ROM sounds and full 32-note polyphony, plus new sound editing modes and sequencer functions.

It also means that sound samples from popular libraries can be loaded in via the workstation's disk drive directly, including sounds from Akai's monster selection.

◆ Turbokit £169

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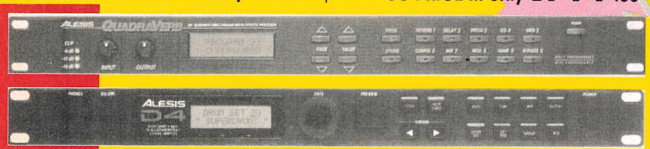

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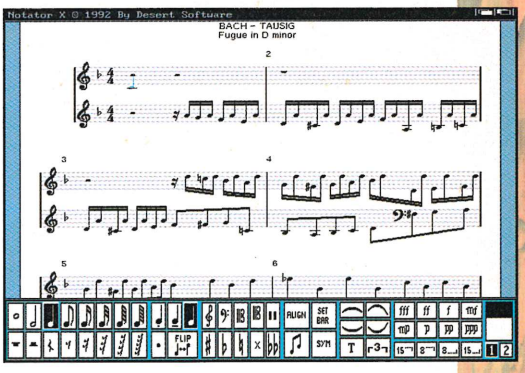
Music-X 2.0 specification revealed

Exclusive – top Amiga sequencer upgrade revealed.



◆ **Notation editing and score writing will be possible with the *Notator-X* section of *Music-X 2*. Coming soon, a *film noir* score module called *Madame-X 2*, with Gerry Anderson theme option.**

Report by Maff Evans

Despite the fact that Software Business' update of *Music-X*, one of the top Amiga sequencers, has been 'imminent' for some time, details on what the new version has to offer have not been forthcoming. However, *Future Music* can now exclusively reveal *Music-X's* latest spec.

The package consists of two sections: *Music-X* itself and *Notator-X,* which is a full notation, editing and score-printing utility and runs in collaboration with the sequencer. The new version of the *Music-X* sequencer offers all the flexibility and graphical editing power of the original, but has a number of additions to make it competitive with the latest systems.

It now has more sound support than previously. As well as being compatible with Blue Ribbon's One Stop Music Shop sound card (see news story below), the number of internal samples has been increased from 16 to 64. Internal samples now also respond to program change, attack velocity, pitch bend, portamento, channel volume, pan, damper pedal, all sounds off, reset controllers, mono mode and poly mode MIDI messages – whereas the original only responded to note on and off messages, with the panning just being the first available channel.

There are five new sequence editing modules on offer, including De-Flam (which offers specific editing and control of flammed notes), Scatter (which randomises note timings, adding a 'human feel' to a track), Swing (to control the delay of certain note patterns), Logical Selector (for grouping notes by user-definable constraints) and Control Mapper (for the flexible mapping of control messages).

Additional changes include an improved Quantize function, the facility to hear program change effects while editing and the inclusion of full ARexx support.

A firm release date and price have not yet been confirmed, but Software Business has set an estimated price point of £149.99. We should be getting a look at the program soon, so watch out for the full review.

***Music-X* 2.0 ◆ £149.99 (approx) ◆ Software Business, Suite 1, Unit 4, Cromwell Business Centre, New Road, St Ives. Tel: 0480 496497**

Tubular swells

Mike Oldfield's innovative and influential album *Tubular Bells* is 20 years old on 25 May. To celebrate the occasion, AMP Records, the UK Electronica organiser, is holding a special Mike Oldfield convention on Sunday 30 at the Bloomsbury Theatre, Gordon Street, London WC1. There will be various fan clubs represented, and the event culminates in a 'concert' of sorts: the first part will be a sound-and-vision presentation of the different versions and spin-offs of *Tubular Bells*, followed by a full-scale performance of the piece.

Heavenly Music is currently programming *Tubular Bells* into a MIDI File: at around 50 minutes, it's possibly the longest recorded so far. The file will form a live-sequenced backing track for a group of musicians to accompany.

AMP's Mark Jenkins told us, "We'll be inviting various people who've been involved with the work over the years, like Sally Oldfield and David Bedford, the conductor and arranger of the orchestral version. However, I must stress that Mike himself will not be attending."

Tickets are £9 in advance or £13 on the night. More info from AMP on 081 889 0616, or send a SAE to Future Age Music Express, PO Box 387, London N22 6SF. Mail order tickets are available from this address: make cheques payable to FAME, enclose a SAE and £1 admin fee.

Blue Ribbon improves music range

American company Blue Ribbon Soundworks is to release a range of new products for the Amiga, many of which will be bundled with the new Amiga 4000 030 machine (see lead news report on page 10).

The One Stop Music Shop is a dedicated sound card which is based on E-mu's Proteus modules. The card fits into an Amiga 2000, 3000 or 4000 computer and has its own audio outputs and MIDI connectors, so that it can run independently of the Amiga's standard sound chip.

The board conforms to the General MIDI standard, with 32 channels of digital sound featuring sounds from all three current Proteus modules (as well as sounds from the Pro-cussion). The facility to access the sounds directly from the Amiga makes for a powerful musical addition to the machine – especially at the asking price of less than £400.

Included with the 'One Stop' board is a piece of editing software which will enable you to mix and crossfade the Proteus samples, apply envelopes and add modulation from virtually any controller – flexible stuff.

Bars and Pipes Pro 2 is not simply an update of the previous sequencing package, it has been re-written from scratch to make use of the new Amigas and a host of new multimedia links.

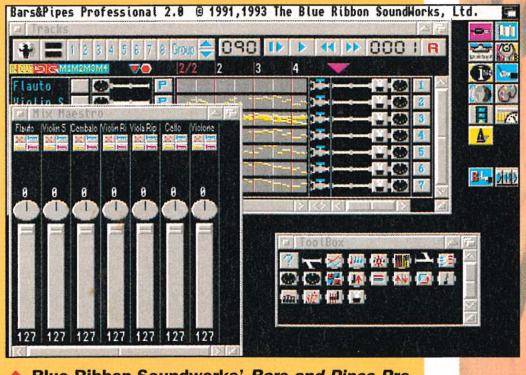
All the features of the original have been included, such as full graphic editing, song construction and SMPTE sync, but the new version goes beyond any other sequencer available.

The system can be linked to the One Stop Music Shop board, handle up to 127 MIDI channels, link to Sunrize's digital sound card for full digital recording in combination with MIDI sequencing (as *Cubase Audio* does), fully automated mixing (including links to control Spirit's Auto desk, Mackie mixers and the Einstein automated mixer) and options to link up to any other multimedia system on the Amiga.

For those of you running out of MIDI channels, the Triple Play Plus interface could be just what you need. Not only does it have MIDI In and Thru connectors, but also three independently assignable MIDI Outs. When used with *Bars and Pipes Pro*, this gives you a total of 48 MIDI channels to play with.

We will be getting our hands on the new software and expansion boards very soon, so keep an eye on *Future Music* for the full reviews.

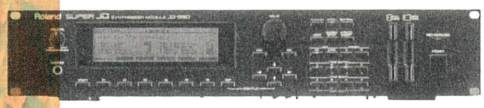
***Bars and Pipes Professional* 2 ◆ £299**
One Stop Music Shop soundcard ◆ £399
Triple Play Plus MIDI interface ◆ £149
◆ Zone Distribution Tel: 071 738 5444



◆ **Blue Ribbon Soundworks' *Bars and Pipes Pro* 2 sequencer should be hitting British shores soon, bringing a host of new features with it.**

Roland rolls 'em out

Bumper crop of sound gear pumps up Roland high-tech portfolio.



◆ **The rackmount JD-990 – claimed to be the most powerful synth ever designed by Roland.**

Several brand-spanking new pieces of pro gear from Roland caused a stir at the recent Frankfurt Music Messe. The company's flagship synth, the JD-800, along with new programming facilities and an expandable set of sounds, has found its way into rackmount format in the shape of the 2U-high, £1,445 JD-990 module.

Roland claims it's the most powerful synth it's ever designed, containing as it does 6Mb of ROM waveform data sampled at 44.1kHz (that'll be the CD rate then), which can be expanded to a massive 16Mb. Eight-part multi-timbrality, 24-voice polyphony and on-board effects make it quite a beast.

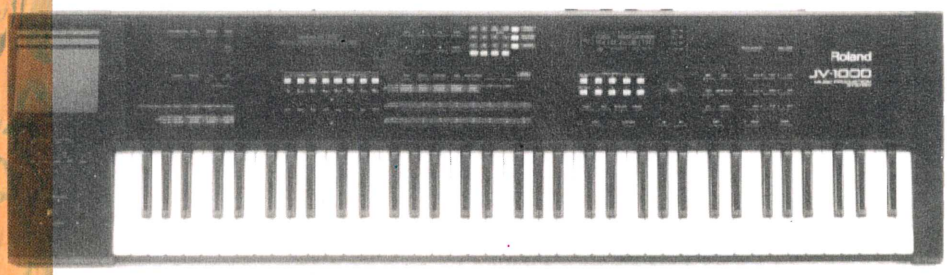
Staying with synths, the new, £1,859 JV-1000 workstation offers a 76-note weighted keyboard, is expandable to 56-voice polyphony, has an 8-track sequncer with additional tracks for rhythm and tempo, a tape sync facility and can be boosted further with two user-installable expansion boards.

And let's not forget the E-series 'intelligent' synths, particularly the impressively specified, £1,899 E-86 with its 241 CD-quality sounds from the JV-80, Standard MIDI File playback and built-in 30-watt sound system. Look out for reviews soon.

For percussionists there was the successor to the SPD-8, the £525 SPD-11 'Total Percussion Pad' – an eight-pad, sample-stuffed trigger that can be plugged straight into an amp for playback of its 255 editable sounds. Optional extra trigger inputs turn it into a very portable electronic kit.

A brace of novel effectors appeared: the Roland SDE-330 dimensional space delay and SRV-330 reverb. Both £699 units use up to 12 tap-delays, each of which can be positioned in a three-dimensional sound field for wild, 3D effects.

◆ **Roland UK Tel: 0252 816181**



◆ **A new flagship workstation, the Roland JV-1000, has a wealth of powerful features behind its 76-key, weighted-action smile – look out for a review of this titanic keyboard in *Future Music* soon.**

Errata telephona

Lieutenant Typo came a-callin' last month and misprinted a couple of phone numbers for us. The Prince's Youth Business Trust fund can be contacted on 071 321 6500, and not at the number quoted in the feature 'Mobile and Motivated'. And Westpoint Creative, purveyor of the very fine Sound Blaster 16 card (which scored 80% in the PC soundcard head-to-head) can be found on 0743 248590.

Beyer goes wireless

Three new ranges of Beyerdynamic VHF wireless mic systems have been launched.

The S150, S250 and S350 are all available with a hand-held transmitter, pocket pack with MCE5 tie clip or strap-mounted transmitter. The 150 and 250 hand-held versions come with a cardioid mic. The systems are 'diversity', which means they have two transmission signals so that if one cuts out the other keeps going.

VHF wireless mic systems from £257

◆ **Beyerdynamic Tel: 0273 479411**

Silly prices at Silica

◆ **An A500 could be yours for £199 – does this Silica offer herald a computer price war?**

Retailer Silica Systems claims to have brought Commodore's Amiga computers to their lowest price ever, with limited-period offers on the A500 at £199 and the A600 at £249 – a £50 saving on the latter.

Both machines offer 1Mb of RAM (random access memory), disk drive and mouse, though a 2Mb A500 is available at an offer price of £229, while a 2Mb version of the A600 comes in at £279, both including a games pack.

◆ **Silica Systems Tel: 081 309 1111**

Korg smorgasbord

If you want to buy some pre-programmed sounds for your synth or module, you usually have to buy one on spec and hope you make the right choice, or spend endless hours down your local music shop playing through all the available software until you find what you want.

But Korg has come up with an idea to alleviate these crises. Send five quid, and you'll receive a 70-minute CD packed with demos. They've been composed with sounds available on PCM cards for Korg's 01/W, 03R/W, M1, M1R, M1REX, M3R, T1, T2 and T3. Then, when you buy a card, you get your fiver back. Now that's what we call good marketing policy.

◆ Korg UK

Euro push from dbx

Noise-reduction specialist dbx has launched four signal processors aimed at studio and live musicians in Europe.

First up is the 172 SuperGate, a dual-channel analogue noise gate and expander featuring speedy and steep 24dB/octave slopes which are claimed to double the effectiveness of the unit when gating weak signals or those masked by high frequencies. A suggested use for the expansion mode is to make erratic levels on drum hits more consistent.

Next is the 120XP Subharmonic Synthesiser, formerly popular among DJs and film sound pros as the Boom Box, which synthesises a sub-octave below the bass in an original recording and offers gut-busting punch without knackering the sound system.

Two half-rack-size amplifiers complete the line-up: the 760X microphone preamp for boosting mic output to line levels and the 1024 buffer amp, which sits between -10dB 'consumer' audio equipment and +4dB 'pro' gear to match input levels, and to soup-up the output of equipment that can't adequately cope with long cable runs.

172 SuperGate £883.60
120XP Subharmonic Synthesiser £304.33
760X Microphone Preamplifier £354.85
1024 Buffer Amplifier £243.23

◆ **AKG Tel: 0483 425702**

FreeSpirit

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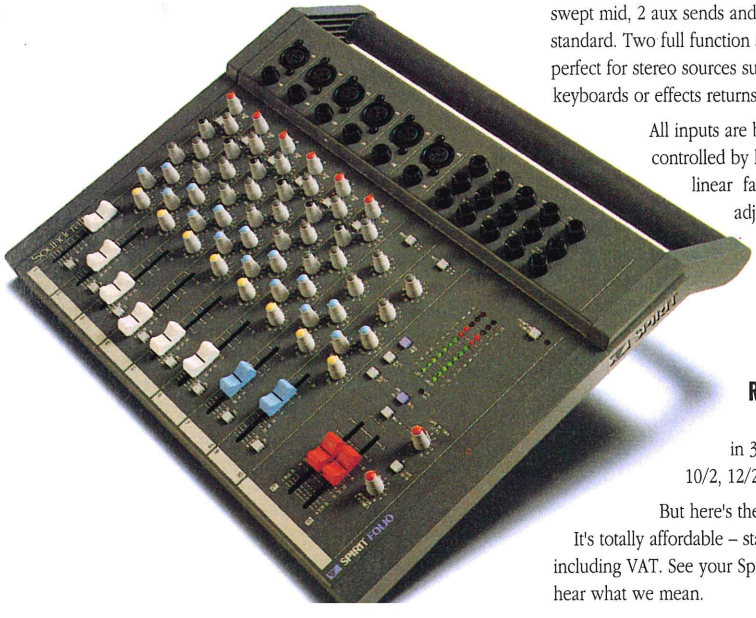
Spirit Folio may be small, and light enough to carry with ease, but it's no lightweight when it comes to big professional features - it's simply packed with them. And it gives you quality that's even better than DAT.

Hardly surprising: Spirit Folio is made by Soundcraft, one of the biggest and most respected names in professional mixing.



You can use Spirit Folio anywhere – for PA mixing in small venues; home or location mixing to DAT, cassette or multitrack recorder; as a submixer or keyboard mixer; or for AV or post-production work. To name just many.

Professional Build

Unlike some small mixers, Spirit Folio won't fall apart after a few weeks on the road – no matter how hard you drive it. Zealous attention to detail at every stage of design and manufacture ensures the highest build quality.

Fully Featured

Folio gives total creative control. Every mono channel has a mic input, 3-band EQ with swept mid, 2 aux sends and a High Pass Filter as standard. Two full function stereo inputs are perfect for stereo sources such as additional keyboards or effects returns.

All inputs are balanced and are controlled by long-throw 60mm linear faders for fast, precise adjustment. A 2-track return for monitoring in recording situations also doubles as an extra stereo effects return.

Right Size, Right Price

Spirit Folio comes in 3 frame configurations: 10/2, 12/2 and 12/2 rackmount.

But here's the real beauty of Folio. It's totally affordable – starting at under £350 including VAT. See your Spirit dealer and you'll hear what we mean.

Free Application Guide

Simply complete and return the coupon to the address below to obtain your free copy of this instructive booklet written by pro-audio journalist Paul White. It shows you step by step how to get the best from your mixer in a variety of situations.

Name _____

Address _____

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What instrument do you play? _____

What magazines do you read? _____

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What equipment do you use? _____

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How would you use Folio? _____

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Soundcraft Electronics Ltd., Cranborne House, Cranborne Industrial Estate, Cranborne Rd, Potters Bar, Herts EN6 3JN, England.
Tel: 0707 665000. Fax: 0707 660482.

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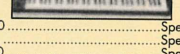

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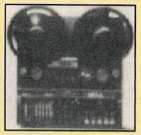

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Hard disk recording takes off at Frankfurt

The new *Cubase Audio* software for Atari's Falcon, launched at Frankfurt, offers a staggering eight digital audio channels for recording and playback while simultaneously playing back and recording on up to 512 channels of MIDI. Apart from the Falcon and the software, all that's required is a hard disk – the bigger the better. Since the Falcon has on-board analogue-to-digital sound converters, this represents a considerable saving on additional hardware.

As well as all the sophistication of arguably the most successful MIDI sequencer program, you can run fully editable digital audio channels simultaneously from the same screen. Four of the audio tracks are played directly from the hard disk while the other four are transferred to RAM. These can also be used for playing samples stored in memory. Effects like reverb are built into the software. The price for the package, available from June onwards, has yet to be fixed, but is expected to be around £800. Work is currently in progress on a piece of hardware that will convert the industry sample rates of CD and DAT especially for Falcon and *Cubase Audio*.

◆ **Harman Audio Tel: 0753 576911**

Cubase Audio joins ST and PC

The latest *Cubase Audio* programs for the PC and ST use Yamaha's CBX-D5, supporting up to two of the hard disk recorders for eight tracks of digital audio. The ST requires 2Mb RAM, the 386 PC needs Windows 3.0 or 3.1.

Mac users need look no further than *Digital Performer* from Mark of the Unicorn. Running on the SE-30 or Classic II, it offers a wide range of sophisticated features for both MIDI and audio tracks and supports up to 544 MIDI channels. It too can support two CBX-D5 units giving up to eight tracks of digital audio.

◆ ***Digital Performer*** **£899, Sound Technology Tel: 0462 480000**

◆ ***Cubase Audio*** **(ST) £669 (PC) £769, Harman Audio Tel: 0753 576911**

Previews become reality

Two hard disk recording products, recently previewed in these very news pages, were on show for the first time at Frankfurt.

The first is from Soundscape, which was running a 4-track hard disk recorder bearing the same name. With a wide number of editing features it can also be synchronized to MIDI and several other time-based codes. The standard package can be extended up to a total of 16 tracks, although you need additional hardware to do this. Available in May, it will cost £2,500.

The other was the first showing in Europe of Akai's stand-alone 4-track recorder, the DR4d. Looking like a conventional multi track machine it has the editing features and location devices you would expect from direct to disk recording, including a fine editing 'jog and shuttle' wheel. The rear panel is kitted out with analogue and digital inputs/outputs and, for a little extra, you can have MIDI and SMPTE interfaces fitted.

Up to four units can be linked together to give 16 tracks of digital recording. For this you would need a fair size hard disk to get a decent track length. The price £1,599 and it will hit these shores in June. Although it does not come with a hard disk, Akai UK is currently scouring suppliers for a cost-effective unit to be bundled with the machine.

◆ **Soundscape Tel: 0222 811512**

◆ **Akai Tel: 081 897 6388**

Two newies for AKG Tri-ad

AKG has added two new condenser microphones to its popular Tri-Power series.

The C5900 vocal mic is a step on from the former C535EB (ah, such names with which to conjure) and features higher gain before feedback, greater proximity effect and lower handling noise, thanks to the somewhat more interestingly monickered 'Interspider TPC-2' suspension system which protects the mic capsule from physical shock.

The new C5600 instrument mic uses the same diaphragm type as the C5900 – a gold-sputtered, double-stretched affair which is claimed to give long-term stability in tough conditions – and features bass roll-off (6 and 12dB) and a high-frequency dispersion cone behind the transducer which is designed to drive reflected sound away from the diaphragm, thus improving clarity.

And why 'Tri-Power'? It's more to do with the three-point philosophy behind the design and features of the range than powering the condenser capsules.

◆ **C5900 £294.95**

◆ **C5600 £345.45**

◆ **AKG**

Tel: 0483 425702

◆ **A new hand-held mic and instrument mic add to the AKG Tri-Power stable.**

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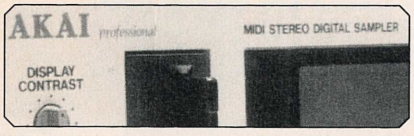

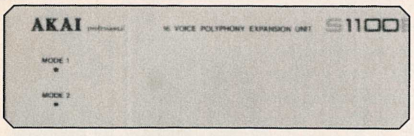

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Alesis Midiverb 3	£POA	Shure SM57	£79
Alesis Microgate	£POA	Shure SM58	£89
Alesis Quadraverb plus	£POA	Steinberg Cubeat	£99
Alesis Quadraverb GT	£POA	Steinberg Midex Plus	£249
Alesis MEQ230	£POA	Symetrix 511A	£299
Alesis Microverb 3	£POA	Tascam 688	£1675
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Amptech 16-2 mixer	£275	Keyboard Stand	£20
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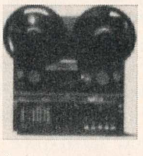

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State's evidence

What's this? 808 State in grunge-techno-crossover shock? Or is it just a rather cool and intriguing photo gimmick? Dave Robinson heads up to Manchester to find out.

Some things are the same for musicians everywhere. If you're serious about making a living out of music, chances are you'll try to find a bunch of soul-mates to help you. Mates with the enthusiasm, the commitment and, most importantly, the right kit. This was certainly the case back in the late '80s, at the conception of 808 State. "Half the time it was just about getting enough MIDI leads together," laughs Graham Massey, guiding hand and techno-spokesman for the band. "You became a group because you couldn't afford the gear on your own!"

808 State have spent most of their five-year existence as a quartet (though Gerald Simpson, AKA A Guy Called Gerald and owner of the original Roland TR-808 drum machine, made it five at the outset). Fourth member and owner of Manchester's Eastern Bloc records, Martin Price, left the band over a year ago – an event that Graham refers to as the "divorce" – to follow other paths with another band, Switzerland.

The three remaining members – Massey, Gerald Simpson and Darren Partington – have produced the fifth 808 album in the New Year. The title, *Gorgeous,* is a superbly apt description of the album's music. Whereas *Ex:El,* the previous album, had a certain hardness and harshness about it, *Gorgeous* exudes a warmth that is positively glowing.

> *"We're always looking for new samples – not from obvious places like TV."*

"There's a definite feeling of 'up' on *Gorgeous*", agrees Graham.

The tracks are far more compact than previously, too. Ideas come and go quite quickly, and it's usually all over after about four minutes. In comparison, the first 808 album, *Newbuild*, had one idea lasting a whole side. "We had lots of ideas to get in," says Graham, "but we found that the tracks should be longer. [Digidesign's] Sound Tools was used to edit down sections that went on too long." The result, is a variety of flavours, with a diversity of feels: an ambient-style core; harder elements of dance; and an obligatory disco skit called *Sexy Dancer.* "We like the camp style of New York disco, you can trace it through every album that we've done."

State-registered verse

As with *Ex:El,* there is a smattering of songs too. And as before, 808 State only employ vocalists with interesting or distinctive voices: on *Ex:El* it was Bjork from The Sugarcubes and Barney from New Order; now it's lead Bunnyman Ian McCulloch and This Mortal Coil's Caroline Seaman.

"We only work with people who've got an empathy with our music," says Graham, "they have to fit in with the 808 flavour, rather than forcing something; we'd approach things differently if we were producing somebody else's songs.

"Songs aren't something we think we

◆ From front to back: ARP Odyssey, ARP sequencer, Wasp synthesizer, the huge modular bit of the 2600, and that ultra-cool Denon Rhythm Box. The doll does not sing on the album.

◆ Graham doing his appalling 'Fluffy the Invisible Puppet' ventriloquist act. Come on, we can see your lips moving.

bled with songwriting a bit. A lot of the time it's been a case of 'Well, we've got some time left, let's do a song!', so we should really spend more time on them.

"Doing a song is very satisfying, 'cos it's a different approach to the instrumental stuff. The points of interest are very different.

"I think songwriting is something we'll grow into, rather than fall into. We love doing the instrumental stuff, but we can't expect everybody to like a whole album of insane micro-twiddling!"

Knobs stay further untwiddled with the use of natural instruments alongside the electronics. Guitar, sax, and clarinet are all to be found on *Gorgeous*; Graham taught himself to play wind instruments by, as he puts it, "dicking about" over the years. "There's a real movement towards bringing the extra dynamics of natural instruments in. But using real instruments has always been part of the 808 sound." True, that was a real sax on *Pacific State*, for instance. So are these extras there to increase the live interest? Is it because so-called natural synth sounds are just not realistic enough?

"It's because we get bored really," Graham says flatly.

But it's also about being innovative. "If you use real sounds," Andy explains, "especially in dance music, it's a change, it gives a track a different edge."

State of mind

So how do 808 State get their tracks together? The answer is deceptively simple, as Andy begins: "We'll sit down and decide what kind of track we're going to do."

"Yeah, it's usually like, 'Ave you heard that track what goes like that?'" interrupts Graham in his very broadest Mancunian accent. "'Well, we'll keep that feel but change it round.'

> *"We're aware of trying not to get stuck into set patterns and routines."*

"To be quite honest," he admits, "we're always copying other people's stuff: recapturing a feel that we've heard on the dance floor, but then turning into something new, giving it the 808 edge. Like, *Reaper Repo* was inspired by a certain track, but it sounds completely different to that original track. We recently met a Mexican group who play live percussion, and they'd done this track based on *Reaper Repo*, but they'd cut it up so it was barely recognisable. I like that idea of mutation, and it's good that we're part of it."

The three have all got their own set-ups at home, so they can work on ideas before bringing them to the studio for looping and further programming. "It's more about organising choices rather than having a clear vision of how something will sound. We never structure things with [Steinberg's] *Cubase* too much; in that way we have a lot of options." explains Graham. To this end, parallel tracks will be recorded with, say, not one but several bass lines so that they can experiment by dropping them in and out. All the ideas are recorded to tape, which can cause confusion for remixers: "Our multi-tracks are often a nightmare for others because they don't make any sense whatsoever," Graham continues. "Accidents are kept on the tape too; I think it's really important that all the little tweaking bits are captured. I'm really into the idea of recording accidents and any quirks that crop up.

"Then we'll all sit down for a mix, and that's when the shouting starts!" he laughs. " We always end up with four or five mixes

Alive and blipping

We interviewed the 808ers between tours: they had just finished two weeks in the UK, supported by a very hyperactive Moby, and were preparing for a 54-date haul around the USA, this time with Meat Beat Manifesto. It's important to the band that they deliver "a top night out", so there's usually a guest DJ to warm the crowd up, plus plenty of lights and visuals. Graham: "An 808 gig is a complete package. You have to get that good vibe going with the crowd."

Their studio may be littered with classic analogue kit, but live playing is mainly a digital affair. "It's too dodgy taking out the old synths: things keep going down." says Graham. He and Andy currently hide behind a Roland Jupiter 8, D-50, Juno 106 and JD-800 MIDI'd to an Oberheim Matrix 1000 and Akai S1100. them how "absolutely f**kin' marvellous" they are, he drops in samples and plays ambient fills with a collection of records and a couple of Technics SL1200s. He also reinforces the rhythm track with congas, timbale and a Roland Octapad triggering an Alesis SR16 and S1000.

That Atari ST at the side of the stage is actually just a decoy: live sequencing is a very rare event. A DAT player provides the usual track backbone instead. "We have used *Cubase* live, but not on every night of a 54-date tour!" says Graham. "Last time we did a lot of dates, we did get a bit bored with always doing the same thing with DAT, so we took the Atari out and did a few introductory-type things with *Cubase* and the S1000.

"At the moment, a lot of the keyboard tracks are missing on the DAT, so we can make things different every night." In this way, they keep up the enthusiselves on a big tour," as Graham says. "Live versions of track are always different to the studio versions. Over the years, we've done about eight versions of *Pacific*, and sometimes I find myself clicking into the wrong one!

"One thing we've noticed is that as you go on, your playing gets much, much better. We're going to be shit hot by the time we come back from America!"

Using the minimal DAT backing is a compromise; Graham would like to see more flexibility in their live set. "We're planning to get A-DAT for the studio anyway, so we might take that out live," he reveals. "It'd give us the possibility of separating out the basslines and drum tracks, and running a sync track to the other gear. It will give us that manipulation in the mix that gives the music more of an edge."

The American tour ends in Hawaii, the US's "808th State" (well, as far as phone dialling codes

◆ E&MM Spectrum synth, SCI Pro One and Memory Moog. Note the Biting Tongues and MC Tunes stickers on the case.

◆ Andy mixing a track, using only the power of happy thought. It's a good job he's got that shock of red hair: when he stands next to the blinds, he completely disappears.

of things because we have different opinions on the way a track should go. The mix is almost like playing an instrument; you get more feel into a track if you treat it like that.

"Very often there are four or five versions of one tune on a single: different directions for different jobs. Darren and Andy, being DJs, have a very solid view of what's useful in a club. I tend to be a bit wayward from that, which is sometimes good and sometimes bad."

State opening

Plan 9, the opening track of *Gorgeous*, contains those major seventh chords so distinctive of *Pacific State*, the track that really put them on the map and in the charts in '89. Was this an intentional inclusion?

"We're aware of trying not to get stuck into set patterns and routines," says Graham. "One of the worst things in the world is when you sit down in front of a keyboard and you think 'Oh no, it's those chords coming out of my fingers again!' and 'If I put Polo mints between my fingers maybe I'll come up with something else!' We're always trying to break that down in everything we do, but occasionally the traits still come through."

One method of exploring new possibilities is to experiment with analogue sequencers. "We recently got an old ARP sequencer, which is like having a [TB-]303 for the [ARP] 2600." Graham enthuses. "Exclusively Analogue are building us an interface for it that goes the other way round to normal: you can use a CV sequencer with a MIDI keyboard. I love the randomness of a CV sequencer; you can sit at it for ten minutes and come up with stuff you'd never come up with if you sat at a computer screen. We're into different ways of sequencing like that. For instance, we've used the Oberheim Cyclone arpeggiator quite a lot." On the day it arrived, it was hooked up to as many synths as possible. The sparkling

> *"Knobs stay further untwiddled with the use of natural instruments."*

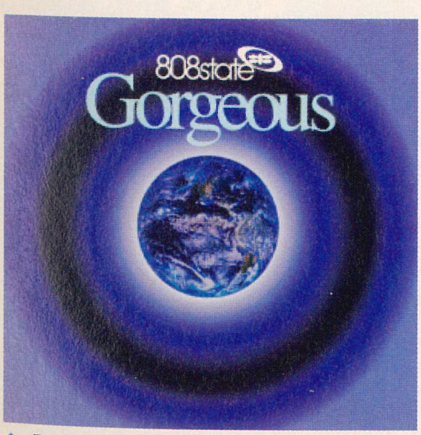
results can be heard on *Nimbus*. "We use the internal sequencer and arpeggiator on the Memory Moog, and the arpeggiator on the Jupiter 8 for coming up with lines too. They're run off the [TR-]909 click trigger."

Surprisingly, the 909, with it's definitive techno and house sounds, takes second place for percussion to a Roland JD-800. "We get a lot of mileage out of the JD-800. We use it more like a drum synthesizer rather than just a sample source," says Graham. "Like, you can take a CR-78 snare which is very 'biscuit-tinny' and add a little bit of a metal sample to it, but only so that you can only 'sense' it, rather than hear it. It makes everything a lot harder.

"Also, you can take something like an 808 bass drum, and put a pitch envelope over it, so it goes 'whoop! whoop!' [imagine a noise like a sci-fi siren]. When you hear that coming out of a PA you think 'Yeah, we're doing it!'.

"We use the JD for pads and things like that; but we do quite a lot of work on the sounds. Despite the fact that it looks like a really 'deep' synth, which it is, it's got an instantly recognisable sound. I can always spot a lot of modern synths on adverts on TV. Therefore, you mustn't over-use something like the JD; you have to use several different synths to get that contrast in sound, and you have to work on sounds to give them your own identity."

The Roland R8, once used heavily for drums, has now lost favour with the guys. "We've just grown out of using it," shrugs Graham. "I just like synthesizing drum sounds instead. We've started to use the 2600 for synthesized drums too after we read about Vince Clarke making his own! And we use the old Pearl Syncussion unit too: we like sampling and layering sounds from that. You have to get a uniqueness ▶▶



In yer record collection

...You should make sure you have all these: (Incidentally, the LP of *Gorgeous* comes with a free, limited-edition disco 12-inch containing three tracks not included on the CD format.)

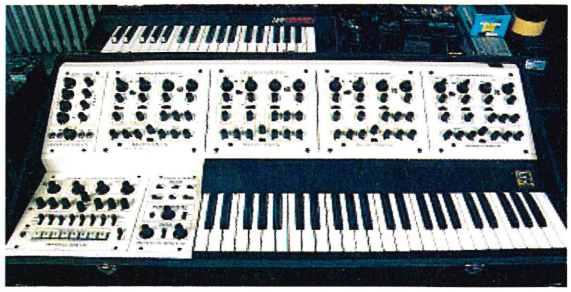
Title	Label	Released
808 singles		
Let Yourself Go/Deepville	Creed	'88
Pacific 909/Cobra Bora	ZTT	'89
EP of Dance (Ancodia/Cobra Bora/Cubik)	ZTT	'90
Cubik/Olympic	ZTT	'90
In Yer Face/Leo Leo	ZTT	'91
Ooops (with Bjork from the Sugarcubes) /808091/Ski Family	ZTT	'91
Lift/Open Your Mind	ZTT	'91
Timebomb/Nimbus/Reaper Repo	ZTT	'92

Title	Label	Released
808 albums:		
Newbuild	Creed	'88
Quadrastate	Creed	'88
90	ZTT/WEA	'89
Ex:El	ZTT/WEA	'91
Gorgeous	ZTT/WEA	'93

..plus remixes for Jon Hassell (*Voice Print*)) Wendell Williams (*Everybody*), Quincy Jones (*Back On The Block*), Yes (*Owner of a Lonely Heart*), YMO (*Light In The Darkness*), Siouxsie and the Banshees (*Face to Face* from *Batman Returns*) and Electronic (*Disappointed*). There was also a mix of David Bowie's *Sound and Vision*, only available in the US, and a remix of Rolf Harris' *Sun Arise*: this was never released because it was recorded at a "sensitive time". In other words, *Stylophonia* by Two Little Boys was released at the same time, and the 808 lads didn't want

◆ Andy, Darren and Graham: 808 State in full, primary-colour effect. These laugh-a-minute guys can be serious men too.

◆ 808 State have lots of gear. So here's some more of it: Akai S1100, Matrix 1000 and Moog Prodigy.



◆ Graham read the live profile of The Shamen in *FM* 6, and remarked: "We seem to have exactly same kit as them!" Like this splendid Oberheim 4 Voice polysynth, for instance.

to drums, 'cos that's something that always sounds the same on dance records."

808 State are so often photographed with their ARP 2600, it's as though they have some overwhelming affection towards the dinosaur. This isn't far from the truth, as Graham waxes nostalgically, "There's something romantic about the look of the 2600. And if you listen to old Stevie Wonder albums you can recognise the unique sound. It's absolutely nothing like the Moog. If you've listened to a lot of music over the years with the character of the 2600 in it, when you come to use the synth, you feel like you're in touch with it. You know your starting point. It's a machine with roots.

"Sometimes we find the sounds of the 2600 don't have enough definition. So if you sample it with the filters open a little more, you get drift; that phase shifting that can be frozen with the sampler. In that way you get the analogue warmth, the character of the 2600, but you get the definition too." The Moogs, especially the Mini, are favourites. "The Moog's got the most bollocks to it. There's something about the filters that really give the bass weight in a track. It's rare we move away from it for bass.

"Sometimes we use the Juno 'cos it's got a lot of sub to it. And often we make combination sounds, like a Moog mixed with something digital like the MicroWave. The bass is very important: it's the foundation of a track, and it's something we pay a lot of attention to."

A digital edge is essential to the band, in their sound and in their philosophy. Graham elucidates: "There's a fine line between the pastiche thing and using the roots of music in a modern, creative way. It's the fine line Lenny Kravitz is always walking, you know? Using original microphones and stuff. He's not quite modern enough, if you know what I mean.

"808 do have a reverence to the past and to the history of music and recording, but we also realise that we're at a revolutionary point with the technology now; therefore our sound should be to do with the new technology as well as the old.

"People are always harping on about analogue gear. Well, we have a deep respect for that, but an equal respect for the future. All the way through 808 State it's been a question of balance. It's like...", he pauses, then laughs, "it's like cooking; you've got to get the ingredients right to make a good dinner."

Taking the state

Getting samples cleared for *Gorgeous,* including those from songs by The Jam and Joy Division, took longer than anticipated and resulted in a delayed release of the album. But 808 State are not averse to recreating samples or 'counterfeiting' their own when necessary.

> *"We only work with people who have got an empathy with our music."*

"We've had to re-create samples a few times," says Graham. "Sometimes you can spend far too much time doing that! There's a sample on *Europa* that was originally a Motown thing, and you just can't sample Motown at all. So we took the essence of that sample and recreated it in minute detail. It had about eight instruments in it, and took us the whole day to re-do it!"

He has come to accept that it's not worth getting upset over prohibited samples. "It's kind of interesting creating your own samples anyway," he says, optimistically. "You see, it's not just to do with how they sound, it's to do with where they've been. So we make something, then record it on to a cassette and re-sample it from that so the quality is reduced. That way you get the right feel to the sound: you don't want gleaming, nice samples, you want a bit of dirt!"

The quest for grit extends to the choice of sampler. 808 State have both Akai's S1000 and S1100, but they often go back to the rough sound of the Casio. "The cheesy strings on *Lift* [from *Ex:El*] are a combination of ARP Quartet and FZ sample," says Graham. "The FZ samples seem to have far more character than the Akai. I'm leaning towards that machine nowadays, because of the lack of quality. It's not awful, it's just a difference in quality which we like.

"I've been recording sounds and stuff for years," he continues. "I've got suitcases full of wacky tapes and strange sounds that we're sifting through all the time. The group I used to be in, Biting Tongues, used these tapes for backing before sampling became popular, way back in 1978. So I've always been into using random sounds: I really enjoy that aspect of music.

"Of course, we're always looking out for new samples too. Not from obvious places like the TV; I mean, we will use it, but we try not to."

80808080fate

Having enough time to do everything they want to do is a problem for the guys in 808 State. "You need to find a balance between your own music and other people's," remarks Graham. But they're still finding time to put out tracks into the clubs under a different name, and there are already tracks recorded for the next album. "We're keen to release some EPs of specific styles; maybe a hard, metal one, and another just of mad, jazzy stuff.

"During the Gulf War, we heard that CNN were showing scud attacks on a disco and planes taking off from aircraft carriers while playing *In Yer Face* and *Cubik*! So perhaps we should do a concept album for World War Three next..." FM

808 Stats

So, how did those Mancs make themselves *Gorgeous*? With the aid of the following:

Sexy synthesizers:
ARP AXXE
ARP 2600
ARP Odyssey
ARP Quadra
E&MM Spectrum Synthesizer
E-mu Proteus
Korg M1
Memory Moog
Mini Moog
Moog Prodigy
Moog Rogue
Moog Opus 3
Oberheim 4 Voice
Oberheim Matrix
OSCar monosyth
Roland D-50
Roland JD-800
Roland Juno 106
Roland Jupiter 8
Roland SH-101
Roland SH09
Roland TB-303
SCI Pro One
Waldorf MicroWave
Wasp Synthesizer
Yamaha CS30
Yamaha SY77
(...you name it, they've probably got it or used it)

Sequencing:
Atari 1040FM running *Cubase*
Atari Mega 2 running *Cubase*
ARP Sequencer
plus internal sequencers on some of their old analogue keyboards

Drums:
Alesis SR16
Denon Rhythm Box
Roland CR-78
Roland R8
Roland TR-909

Other keyboards:
Fender Rhodes MK11 Stage Piano
Hohner Clavinet D6

Samplers:
Akai S1000
Akai S1100
Casio FZ10M

Other bits and pieces:
Alesis Quadraverb
Bass and alto clarinets
Casio MIDI Guitar
Soprano and tenor saxes
Takamine acoustic guitars

And what's on the 808-ers wish list?
"A machine that writes lyrics

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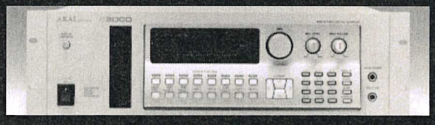

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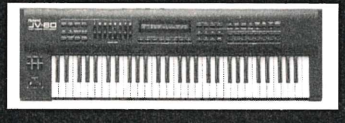

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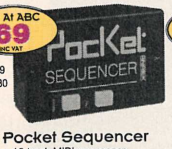

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Format Wars

Which computer is best for making music? Karl Foster challenges the editors of Britain's biggest-selling computer magazines to defend their platforms so you can decide.

"The Falcon's built-in sound system is just blinding."
Paula Richards
ST Format

"You can put together a PC system to suit your needs."
Mark Higham
PC Format

"The Amiga 1200 offers massive power at low price."
Marcus Dyson
Amiga Format

"The Mac interface's ease of use is legendary."
Andy Storer
MacFormat

WHETHER YOU'RE TAKING your first, tentative steps into composition on computer or looking to upgrade your existing machine, well, you've got a bit of a job on your hands really. Choosing the right computer is something of a juggling act – when you've decided how much you can afford, it's a case of sussing which 'platform' (a spot of jargon that means a particular family of computers) to go for. That involves checking out the software available – the stuff that actually makes a computer do something – and seeing whether there are programs specific to your needs.

Not so long ago, the Atari ST was the logical choice because of the huge range of music software available for it. The ST is still a contender for this reason, but Atari's new Falcon supersedes it.

Once you've made up your mind about which platform to go for, you'll need to decide on a configuration – what size of hard disk to get, what type of monitor – and in some cases this means extra expense on top of the cost of the basic machine.

The leading computer platforms all have their own special area of renown – the PC is big in business, the Amiga is a graphics god, the Mac is the biz in desktop publishing, for enough processing power and software support to help you make music effectively.

The musical possibilities opened up by computer power are many: MIDI sequencing, editing sounds on synths, storing banks of sounds, editing samples, recording digital audio direct to hard disk, score writing, auto-arrangement... there's a lot to be had.

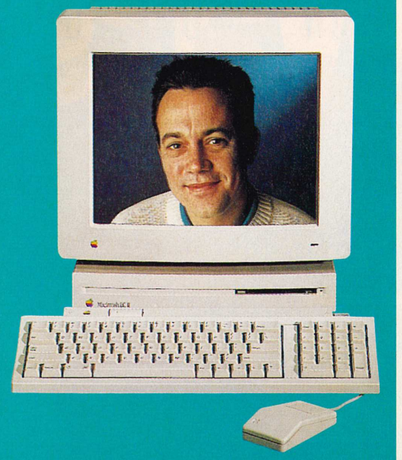
We've taken similar configurations of the four leading platforms – the Apple Macintosh LCii, the Commodore Amiga 1200, Atari's new Falcon and a 386 PC, each with a monitor, MIDI interface and hard drive – and asked the editors of Britain's biggest-selling computer magazines to state why the computer they support is a worthy choice for the musician. Between them the editors report to more than 250,000 readers each month, so there's no doubt that they know the capabilities of the machines and what

An Acorn drops

One platform notable by its absence from this comparison is the Acorn Archimedes, a powerful machine that comes from the people who brought you the BBC Micro.

The Archie is very popular in schools and supported by masses of educational software, including music tuition programs. But there's not much out there in the way of heavyweight software for the pro or semi-pro musician com-

Apple Macintosh LCii



Andy Storer, editor of *MacFormat*, champions the number-crunchy Apple.

The LCii is an affordable Mac with a 16MHz Motorola 68030 CPU (central processing unit) and comes with 4Mb of RAM and either a 40Mb or an 80Mb hard drive. Built-in video supports up to 16 colours on Apple 13/14-inch monitors, expandable to 256 colours with VRAM, and 32,768 colours on 12-inch monitors. The Apple interface's ease of use is legendary.

A SCSI (Small Computer Systems Interface) port is fitted for direct connection to any SCSI device, and you can network several Macs without any additional hardware or software. There are two serial ports for connecting a modem, printer or MIDI connection. The built-in 1.4Mb floppy drive can read and format PC disks for data exchange between Mac and PC – useful for transferring MIDI files from other machines – and the LCii can run old Apple IIe software.

A PDS expansion slot means you can connect additional hardware (such as a digital recording system), and maximum memory expansion is 10Mb using SIMMs at around £30 per Mb. For greater speed, Applied Engineering offers the Transwarp LC board (£1,000 up).

An 8-bit mono sound recording and playback system is built-in, really for voice-mail messages and system sounds, though with extra software it can be used for hard-disk recording at a push. The LCii also has a four-channel soundchip, but don't expect it to compete with a synth. There's no on-board MIDI ports – you must connect an interface that best suits your needs to one of the serial ports. A simple one In, three Out interface (such as Opcode's MIDI Translator) is around £50, or you could go for the £1,000-plus Opcode Studio 5, a patchbay, interface, merge-box and synchroniser in one box. The MOTU MIDI Time Piece can be networked to offer 32 MIDI Ins and Outs, giving 512 separate channels. Yamaha designed a basic Mac MIDI interface into its TG100 tone generator – and other computer sound modules are starting to follow suit.

Apple provides a system-level environment for MIDI data routing via its *MIDI Manager* software, with other MIDI environments for the Mac including Opcode's *OMS* and *MIDIShare* from TimeTech.

The LCii offers a lot for your money, but Apple has announced the more powerful LCiii (with a 25MHz CPU for £1,595), so expect even better deals on the LCii soon.

More Mac music

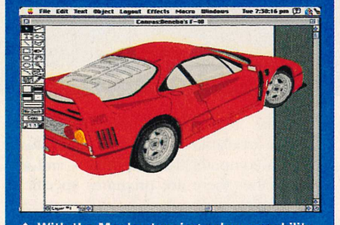
Musical applications are widely supported, from basic educational material through to editors, librarians, professional sequencers, score-printing, sample-editing, MIDI-control environments, high-end professional digital-audio recording and post-production tools. The key software manufacturers are Mark Of The Unicorn, Opcode Systems, Passport, Dr T's, Digidesign, C-Lab, Emagic and Steinberg. There are also smaller specialised companies such as Coda (whose *Finale* software dominates professional score-printing) and Ars Nova.

Big instrument manufacturers are providing Mac software to control or enhance their kit. For example, Roland has *Track Manager* for its DM80 hard-disk recorder, Akai produces front-panel controller software for the S1100, and E-mu Systems has an EIIIxp remote panel editor.

Digidesign provides many innovative digital-audio Mac packages such as *SampleCell, SoundTools* and *ProTools* and now provides a low-cost digital-audio card for the LC called AudioMedia LC, which was launched in the US in January '93 with a US price of $995.

Other applications

With its innovative graphical user interface (GUI), the Macintosh (launched in '84) quickly established itself as the leading mainstream platform for word processing, desktop publishing (DTP), graphics and image manipulation, with software such as Microsoft *Word*, Quark *XPress*, Aldus *PageMaker*, Adobe *Illustrator*, and *PhotoShop*.



◆ With the Mac's stunning colour capability, Deneba Systems' *Canvas F40* really shines.

The Mac is now also becoming a multimedia platform for presentation and education using *Macromind Director* and Aldus *Persuasion*. There are Mac-based information touch-screen systems at several British airports and art galleries, and Apple's *QuickTime* video-clip system software is set to revolutionise desktop video and education by enabling any document to contain video clips. American higher education uses innovative information environments such as *HyperCard* and *SuperCard* on the Mac. In music education, Opcode's *Claire*

APPLE MACINTOSH LCii
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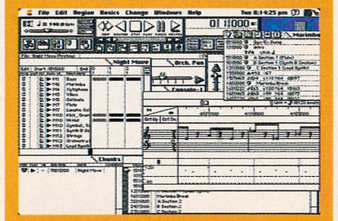
Tel: Dial 100 and ask for Freephone Apple.
Opcode MIDI Translator (one In, three Out MIDI inter-

Sequencer software for the Mac

***Performer* ◆ £499**
by Mark of the Unicorn
from Sound Technology

Performer (reviewed in *FM* 2) has a long history on the Mac, picking up a large following – especially in America, where it has until recently been seen as the industry standard Mac sequencer. However, it has taken considerable



◆ *Performer*, long regarded as the standard Mac sequencer, can open multiple windows.

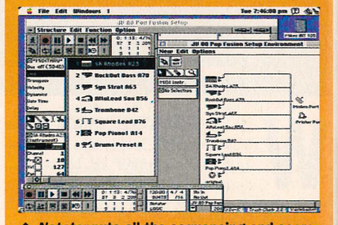
time to respond to innovations made by other companies (such as real-time editing). Still, it is straightforward to use (if a little sluggish) and integrates seamlessly with MOTU's MTP interface, the professional industry standard.

The editing and quantising options are extensive and there are some score-editing functions (which Opcode's *Vision* totally lacks), even though the score-printing capabilities are limited compared with *Notator*'s. An audio version of *Performer* (called *Digital Performer)* is now available and this will support the new Yamaha CBX-D5 hard-disk recording system.

***Notator Logic* ◆ £499**
by Emagic
from Sound Technology

Notator Logic is the latest professional integrated sequencing/score-writing package for the Mac (see the review in *FM* 6). The system, totally re-designed for the Mac, features an object-orientated environment, which is a departure from the design of other sequencers. This environment enables you to graphically define your studio setup, then address your tracks in terms of icons or instrument names.

Notator Logic offers more than any other package – such as 960 ppqn (pulses per quar-



◆ *Notator* puts all the sequencing and score-writing tools you could want at your disposal.

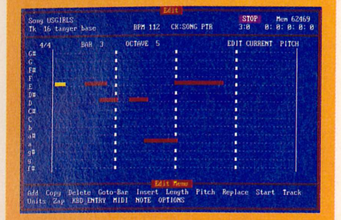
ter-note) resolution (1/3840th notes), tempo of 0.5 to 9,999 bpm, complete real-time editing, and comprehensive real-time score manipulation. What's more, all windows can be dynamically linked to scroll and display information in sync – no matter where information is being edited. This means that you can always keep multiple views of a song open and immediately see any changes in several different graphic representations.

A version that includes audio recording is due in May, enabling real-time editing (such as reversal of audio data while the sequencer is running), and supporting the entire Digidesign

Sequencer software for the PC

For DOS users
Sequencer Plus
Junior £55, Classic £165, Gold £295
by Voyetra
from Computer Music Systems

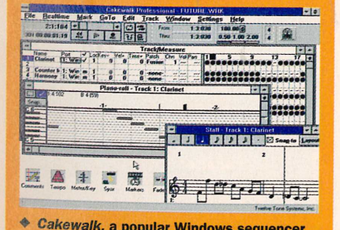
One of the most well-known DOS-based sequencers for the PC is *Sequencer Plus*, which comes in three versions: Junior (64 tracks),



◆ *Sequencer Plus Gold*, one of the best-known DOS-based sequencers for the PC.

Classic (400 tracks) and Gold (3,000 tracks). The program includes an instrument librarian, multi-ports, multi-channel record, many non-destructive playback options (such as real-time transposition), program change, volume, panning and many other features. It also has one of the most comprehensive sets of MIDI editing functions you can find, including harmonic transposition, inversion and various types of randomisation. Being DOS-based it will run on any PC with a hard disk – even on XTs which sell for about £150 or less.

For Windows users
***Cakewalk for Windows* ◆ £299**
by 12 Tone
from Sound Technology
***Cadenza for Windows* ◆ £295**
by Big Noise
from Arbiter
***Mastertracks Pro 4.51* ◆ £299**
by Dan McKee
from Digital Music
***Trax* ◆ £99**
by Passport
from MCM
***SeqWin* ◆ £99**
from Zone Distribution



◆ *Cakewalk*, a popular Windows sequencer, supports digital audio and multimedia.

The development and growing popularity of Windows, Microsoft's graphical user interface for the PC, has resulted in an explosion of graphic-based sequencing packages over the last few years. At the moment, one of the best choices is *Cakewalk for Windows*, which offers 256 tracks, digital audio playback, its own programming language, notation and a range of graphical editing features. A very close contender is *Cadenza for Windows,* which offers more or less the same at around the same price. It has better notation but no digital audio. Sequencers for beginners include *Trax, SeqWin, WinJammer* and *PowerTracks* (which comes free with the MQX interface)

The most common PC today – a standard rather than a particular make of machine – is the 80386. It is 32-bit and can run at 16–33 MHz. All PCs use MS-DOS as the operating system (DOS 6 is the latest version), but there is now also Windows, a GUI (Graphical User Interface) that uses icons and a mouse. Its huge success has forced many software manufacturers to re-write their programs, and has made it possible for Mac and ST programs to be transferred to the PC.

PCs use 3.5-inch floppy disks (formatted at 720k or 1.4Mb), or the older 5.25-inch (which formats at 360k or 1.2Mb). Your PC can be installed with both types if you wish, but most software comes on both formats. At least an 80Mb hard disk (for Windows) is recommended, but if you want to do digital audio work then get a 200Mb hard disk or more (which will cost about £350).

The present graphics standard on the PC is S-VGA (Super Video Graphics Array). This has a resolution of 1024 x 768 pixels on-screen, but it is also capable of lower resolutions to enable you to run older programs. The memory of your graphics card (256k, 512k or 1Mb) controls the number of colours you are able to display – a 1Mb card gives you 256 colours at the 1024 x 768 resolution. S-VGA cards start at about £60, with the monitors at about £150.

Most PCs have no built-in music capabilities, only a monophonic beep or buzzer, but many manufacturers are now fitting soundcards to PCs as standard. These can range from a basic 11-note-polyphonic FM synth to a Wave-Table synth with 16-bit digital audio and MIDI capabilities. (See *FM* 6 for more on soundcards.) Soundcards start at £35, but 16-bit cards are about £200.

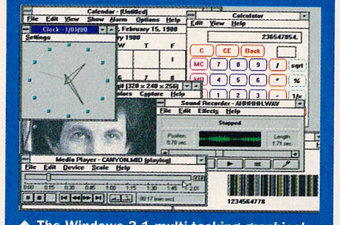
To make music seriously on the PC you'll need a MIDI interface, internal or external – about £60 up. The industry standard has been the Roland MPU and most DOS programs require MPU compatibility. Windows is changing this by handling the transfer of data from the music software to the MIDI interface. So these days MIDI interfaces need to provide either a Windows driver or MPU compatibility – or both, like the MQX-32M. It has two MIDI Ins and two independent MIDI Outs (giving 32 MIDI channels) and is ideal if you need to sync to tape: it can read and write SMPTE time code.

There are thousands of manufacturers making their own models of PCs. You decide the power, speed, memory, disk drives, monitor and whatever, putting together your own specific system. You can start making music on a PC for about £250 (using an XT, a single-port MIDI interface and a basic sequencer). However, I'd recommend at least a 386 PC with an 80Mb hard disk and S-VGA graphics – about £500, plus another £100 for a beginners' package (interface and sequencer) or about £250 or so for a more professional one.

Other applications

The PC's main use is in business, where sales are in millions. There is little you can't get for it, either in terms of software or hardware expansion options.

There are three main categories of business software available: word processors (in-

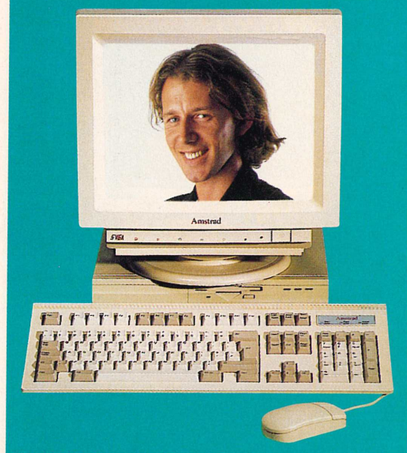


◆ The Windows 3.1 multi-tasking graphical environment has made the PC as friendly and versatile as the Mac and ST. Its support for multimedia makes it perfect for music.

cluding *WordPerfect, Word for Windows, WordStar* and *Ami Pro)*, spreadsheets (such as *Lotus 1-2-3, Excel* and *Quatro Pro)* and databases (including *dBase, Superbase, Access* and *Paradox).*

As well as serious business applications, there are also plenty of communications programs, desktop publishing, art and image processing, video editing, and education packages. Oh, and before you ask, yes you can play games. Games cost £15–£40 and there is a vast library of public domain and share-

386 PC compatible



Mark Higham, editor of *PC Format*, tells of the PC-compatible's huge software base.

More PC music

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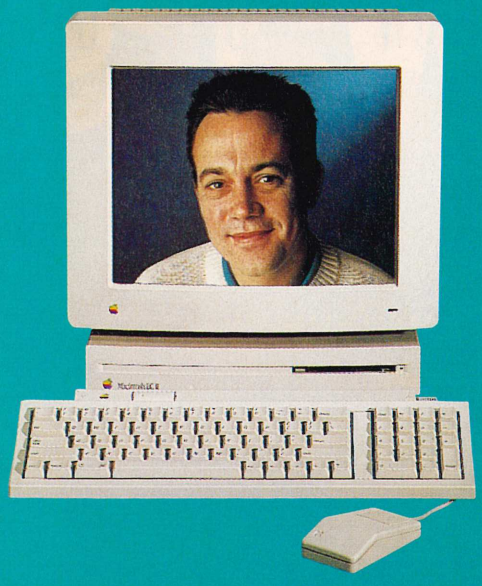
Apple Macintosh LCii



Andy Storer, editor of *MacFormat*, champions the number-crunchy Apple.

The LCii is an affordable Mac with a 16MHz Motorola 68030 CPU (central processing unit) and comes with 4Mb of RAM and either a 40Mb or an 80Mb hard drive. Built-in video supports up to 16 colours on Apple 13/14-inch monitors, expandable to 256 colours with VRAM, and 32,768 colours on 12-inch monitors. The Apple interface's ease of use is legendary.

A SCSI (Small Computer Systems Interface) port is fitted for direct connection to any SCSI device, and you can network several Macs without any additional hardware or software. There are two serial ports for connecting a modem, printer or MIDI connection. The built-in 1.4Mb floppy drive can read and format PC disks for data exchange between Mac and PC – useful for transferring MIDI files from other machines – and the LCii can run old Apple IIe software.

A PDS expansion slot means you can connect additional hardware (such as a digital recording system), and maximum memory expansion is 10Mb using SIMMs at around £30 per Mb. For greater speed, Applied Engineering offers the Transwarp LC board (£1,000 up).

An 8-bit mono sound recording and playback system is built-in, really for voice-mail messages and system sounds, though with extra software it can be used for hard-disk recording at a push. The LCii also has a four-channel soundchip, but don't expect it to compete with a synth. There's no onboard MIDI ports – you must connect an interface that best suits your needs to one of the serial ports. A simple one In, three Out interface (such as Opcode's MIDI Translator) is around £50, or you could go for the £1,000-plus Opcode Studio 5, a patchbay, interface, merge-box and synchroniser in one box. The MOTU MIDI Time Piece can be networked to offer 32 MIDI Ins and Outs, giving 512 separate channels. Yamaha designed a basic Mac MIDI interface into its TG100 tone generator – and other computer sound modules are starting to follow suit.

Apple provides a system-level environment for MIDI data routing via its *MIDI Manager* software, with other MIDI environments for the Mac including Opcode's *OMS* and *MIDIShare* from TimeTech.

The LCii offers a lot for your money, but Apple has announced the more powerful LCiii (with a 25MHz CPU for £1,595), so expect even better deals on the LCii soon.

More Mac music

Musical applications are widely supported, from basic educational material through to editors, librarians, professional sequencers, score-printing, sample-editing, MIDI-control environments, high-end professional digital-audio recording and post-production tools. The key software manufacturers are Mark Of The Unicorn, Opcode Systems, Passport, Dr T's, Digidesign, C-Lab, Emagic and Steinberg. There are also smaller specialised companies such as Coda (whose *Finale* software dominates professional score-printing) and Ars Nova.

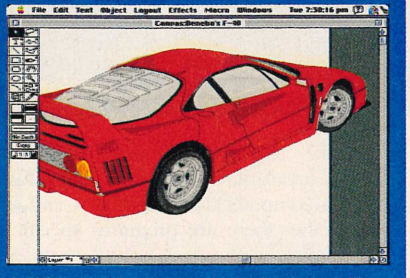
Big instrument manufacturers are providing Mac software to control or enhance their kit. For example, Roland has *Track Manager* for its DM80 hard-disk recorder, Akai produces front-panel controller software for the S1100, and Emu Systems has an EIIIxp remote panel editor.

Digidesign provides many innovative digital-audio Mac packages such as *SampleCell, SoundTools* and *ProTools* and now provides a low-cost digital-audio card for the LC called AudioMedia LC, which was launched in the US in January '93 with a US price of $995.

APPLE MACINTOSH LCii
4Mb memory and 40Mb hard disk, 14-inch colour monitor, keyboard and mouse: £1,120
Apple Computer UK Ltd, 6 Roundwood Avenue, Stockley Park, Uxbridge, Middlesex, UB11 1BB
Tel: Dial 100 and ask for Freephone Apple.
Opcode MIDI Translator (one In, three Out MIDI inter-

Other applications

With its innovative graphical user interface (GUI), the Macintosh (launched in '84) quickly established itself as the leading mainstream platform for word processing, desktop publishing (DTP), graphics and image manipulation, with software such as Microsoft *Word*, Quark *XPress*, Aldus *PageMaker*, Adobe *Illustrator*, and *PhotoShop*.



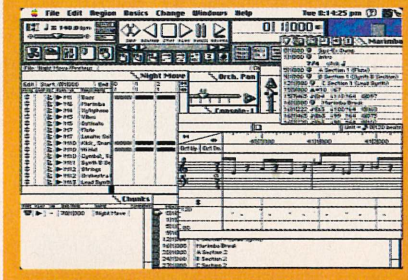
◆ **With the Mac's stunning colour capability, Deneba Systems' *Canvas F40* really shines.**

The Mac is now also becoming a multimedia platform for presentation and education using *Macromind Director* and Aldus *Persuasion*. There are Mac-based information touch-screen systems at several British airports and art galleries, and Apple's *QuickTime* video-clip system software is set to revolutionise desktop video and education by enabling any document to contain video clips. American higher education uses innovative information environments such as *HyperCard* and *SuperCard* on the Mac. In music education, Opcode's *Claire*

Sequencer software for the Mac

***Performer* ◆ £499**
by Mark of the Unicorn
from Sound Technology

Performer (reviewed in *FM* 2) has a long history on the Mac, picking up a large following – especially in America, where it has until recently been seen as the industry standard Mac sequencer. However, it has taken considerable time to respond to innovations made by other companies (such as real-time editing). Still, it is straightforward to use (if a little sluggish) and integrates seamlessly with MOTU's MTP interface, the professional industry standard.



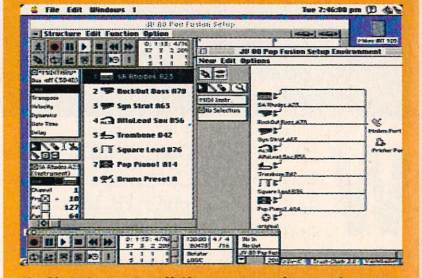
◆ ***Performer*, long regarded as the standard Mac sequencer, can open multiple windows.**

The editing and quantising options are extensive and there are some score-editing functions (which Opcode's *Vision* totally lacks), even though the score-printing capabilities are limited compared with *Notator's*. An audio version of *Performer* (called *Digital Performer)* is now available and this will support the new Yamaha CBX-D5 hard-disk recording system.

***Notator Logic* ◆ £499**
by Emagic
from Sound Technology

Notator Logic is the latest professional integrated sequencing/score-writing package for the Mac (see the review in *FM* 6). The system, totally re-designed for the Mac, features an object-orientated environment, which is a departure from the design of other sequencers. This environment enables you to graphically define your studio setup, then address your tracks in terms of icons or instrument names.

Notator Logic offers more than any other package – such as 960 ppqn (pulses per quarter-note) resolution (1/3840th notes), tempo of 0.5 to 9,999 bpm, complete real-time editing, and comprehensive real-time score manipulation. What's more, all windows can be dynamically linked to scroll and display information in sync – no matter where information is being edited. This means that you can always keep multiple views of a song open and immediately see any changes in several different graphic representations.



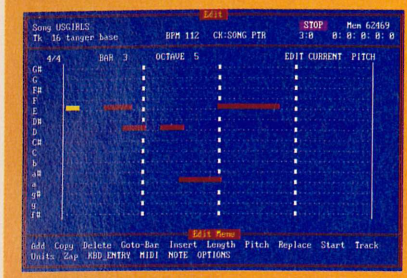
◆ ***Notator* puts all the sequencing and score-writing tools you could want at your disposal.**

A version that includes audio recording is due in May, enabling real-time editing (such as reversal of audio data while the sequencer is running), and supporting the entire Digidesign

Sequencer software for the PC

For DOS users
Sequencer Plus
Junior £55, Classic £165, Gold £295
by Voyetra
from Computer Music Systems

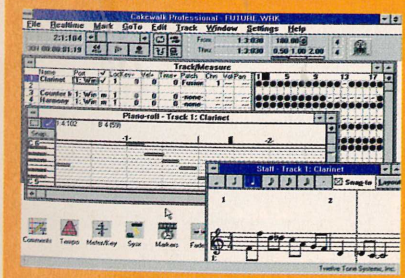
One of the most well-known DOS-based sequencers for the PC is *Sequencer Plus*, which comes in three versions: Junior (64 tracks),



◆ ***Sequencer Plus Gold*, one of the best-known DOS-based sequencers for the PC.**

Classic (400 tracks) and Gold (3,000 tracks). The program includes an instrument librarian, multi-ports, multi-channel record, many non-destructive playback options (such as real-time transposition), program change, volume, panning and many other features. It also has one of the most comprehensive sets of MIDI editing functions you can find, including harmonic transposition, inversion and various types of randomisation. Being DOS-based it will run on any PC with a hard disk – even on XTs which sell for about £150 or less.

For Windows users
***Cakewalk for Windows* ◆ £299**
by 12 Tone
from Sound Technology
***Cadenza for Windows* ◆ £295**
by Big Noise
from Arbiter
***Mastertracks Pro 4.51* ◆ £299**
by Dan McKee
from Digital Music
***Trax* ◆ £99**
by Passport
from MCM
***SeqWin* ◆ £99**
from Zone Distribution



◆ ***Cakewalk*, a popular Windows sequencer, supports digital audio and multimedia.**

The development and growing popularity of Windows, Microsoft's graphical user interface for the PC, has resulted in an explosion of graphic-based sequencing packages over the last few years. At the moment, one of the best choices is *Cakewalk for Windows*, which offers 256 tracks, digital audio playback, its own programming language, notation and a range of graphical editing features. A very close contender is *Cadenza for Windows*, which offers more or less the same at around the same price. It has better notation but no digital audio. Sequencers for beginners include *Trax*, *SeqWin*, *WinJammer* and *PowerTracks* (which comes free with the MQX interface).

The most common PC today – a standard rather than a particular make of machine – is the 80386. It is 32-bit and can run at 16–33 MHz. All PCs use MS-DOS as the operating system (DOS 6 is the latest version), but there is now also Windows, a GUI (Graphical User Interface) that uses icons and a mouse. Its huge success has forced many software manufacturers to re-write their programs, and has made it possible for Mac and ST programs to be transferred to the PC.

PCs use 3.5-inch floppy disks (formatted at 720k or 1.4Mb), or the older 5.25-inch (which formats at 360k or 1.2Mb). Your PC can be installed with both types if you wish, but most software comes on both formats. At least an 80Mb hard disk (for Windows) is recommended, but if you want to do digital audio work then get a 200Mb hard disk or more (which will cost about £350).

The present graphics standard on the PC is S-VGA (Super Video Graphics Array). This has a resolution of 1024 x 768 pixels on-screen, but it is also capable of lower resolutions to enable you to run older programs. The memory of your graphics card (256k, 512k or 1Mb) controls the number of colours you are able to display – a 1Mb card gives you 256 colours at the 1024 x 768 resolution. S-VGA cards start at about £60, with the monitors at about £150.

Most PCs have no built-in music capabilities, only a monophonic beep or buzzer, but many manufacturers are now fitting soundcards to PCs as standard. These can range from a basic 11-note-polyphonic FM synth to a Wave-Table synth with 16-bit digital audio and MIDI capabilities. (See *FM* 6 for more on soundcards.) Soundcards start at £35, but 16-bit cards are about £200.

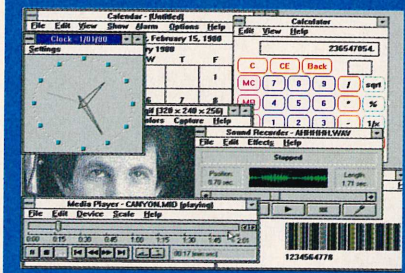
To make music seriously on the PC you'll need a MIDI interface, internal or external – about £60 up. The industry standard has been the Roland MPU and most DOS programs require MPU compatibility. Windows is changing this by handling the transfer of data from the music software to the MIDI interface. So these days MIDI interfaces need to provide either a Windows driver or MPU compatibility – or both, like the MQX-32M. It has two MIDI Ins and two independent MIDI Outs (giving 32 MIDI channels) and is ideal if you need to sync to tape: it can read and write SMPTE time code.

There are thousands of manufacturers making their own models of PCs. You decide the power, speed, memory, disk drives, monitor and whatever, putting together your own specific system. You can start making music on a PC for about £250 (using an XT, a single-port MIDI interface and a basic sequencer). However, I'd recommend at least a 386 PC with an 80Mb hard disk and S-VGA graphics – about £500, plus another £100 for a beginners' package (interface and sequencer) or about £250 or so for a more professional one.

Other applications

The PC's main use is in business, where sales are in millions. There is little you can't get for it, either in terms of software or hardware expansion options.

There are three main categories of business software available: word processors (including *WordPerfect*, *Word for Windows*, *WordStar* and *Ami Pro*), spreadsheets (such as *Lotus 1-2-3*, *Excel* and *Quatro Pro*) and databases (including *dBase*, *Superbase*, *Access* and *Paradox*).



◆ **The Windows 3.1 multi-tasking graphical environment has made the PC as friendly and versatile as the Mac and ST. Its support for multimedia makes it perfect for music.**

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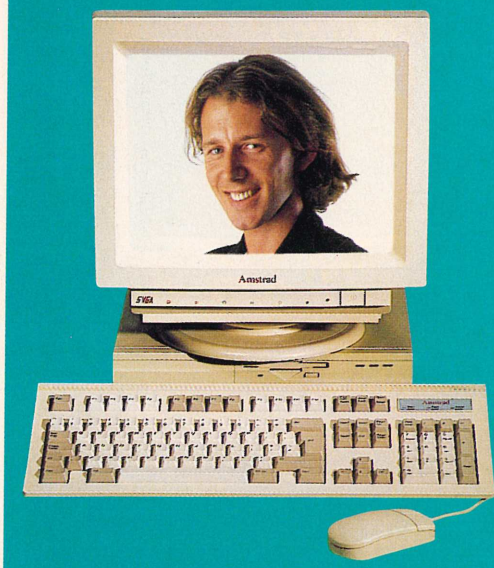

Mark Higham, editor of *PC Format*, tells of the PC-compatible's huge software base.

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There are quite a few additional music utilities for the PC, mainly centred on editing and notation. Professional notation programs for the PC are *Encore*, *Finale* and *Score*, while beginners to notation may find that *MusicTime*, *QuickScore Deluxe* or *Music Prose* fit the bill. A particularly flexible editor is Dr T's generic patch editor/librarian *X-oR*. You can also use composition programs rather than sequencers to create songs in a particular style – try *PowerChords* (reviewed *FM* 4) or *Band-In-A-Box*.

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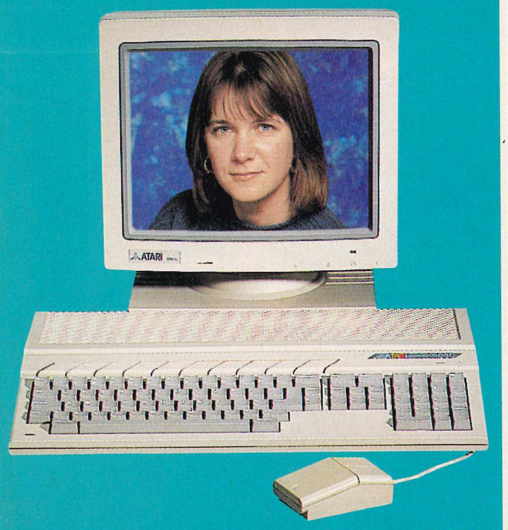
Atari Falcon030



Paula Richards, editor of *ST Format*, highlights the Falcon's musical heritage.

The Atari ST has been the music computer of choice for many years, thanks to a magnificent range of top-quality music software and the fact that it is the only machine with MIDI ports built-in as standard, and Atari's new Falcon has everything it takes to carry on the tradition. The Falcon isn't so much an upgraded ST, however, as a completely new machine that still retains a good deal of compatibility. At the heart of the system is a 32-bit Motorola 68030 running at 16MHz, giving it a respectable turn of speed (running about four times faster than an ST and as fast as a 25MHz 386DX PC). Alongside the CPU is a DSP (Digital Signal Processor) chip – the 56001 – which runs at a speedy 32MHz with its own very fast memory. This mass of acronyms and numbers describes a speedy machine sporting a very fast co-processor that's primarily aimed at dealing with sound.

There is an impressive number of video modes up to VGA standard, including the three current ST modes. Most colourful is the true-colour mode with 65,536 colours on-screen and resolutions of up to 640 by 480 – even greater when using overscan.

There is a multitude of ports: an internal expansion bus, a slot for a maths co-processor and a port enabling direct access to the DSP. Atari seems to have learnt a few lessons and the Falcon can be used with a wide variety of industry-standard peripherals. Hard disks and CD-ROM drives are handled using a SCSI 2 port and just about any type of monitor can be connected – from TVs to standard VGA monitors, as well as Atari's high-resolution and colour monitors. The Falcon sports a 1.44Mb disk drive and an internal IDE hard disk interface. There are also the familiar MIDI ports and digital and analogue joystick ports as well as a LAN (Local Area Network) socket.

The built-in sound system is blinding for a machine of this price. There are 16-bit digital-to-analogue and analogue-to-digital converters, which mean that sampling at CD quality is a matter of loading some software and plugging the sound source straight into the back of the machine. Sample rates are up to a healthy 50kHz with eight channels to play with.

As with all computers it's the quality of the software that will make or break the Falcon. It has a catalogue of serious ST software to draw on and Atari claims a compatibility of around 70% for high-resolution software. The big names in the music software business, like D2D Systems and Steinberg, have put their weight behind the new machine, so the future is looking rosy. Its wide range of facilities lend themselves to almost any function, from games to professional applications. The technical specifications take on a new light when you consider the price – for the same price as a DSP board for a Mac you can buy an entire Falcon, with no expensive hardware add-ons required. With its sexy hardware and good support the Falcon looks as if it'll make its mark in no uncertain terms.

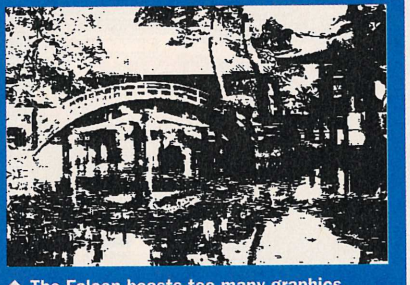
More Falcon music

D2D Systems' *4T/FX* uses the Falcon's hardware to sample in 16-bit at 50kHz directly to the hard disk. It has four channels, two of which are available for recording. Tracks can be bounced-down and routed through the DSP-run effects unit. The effects cover flanging, digital delay, chorus and harmonising. Included in the package is *D2D Edit*, a graphical editor for your samples. A hardware add-on is to follow which will give four phono inputs and outputs as well as digital outputs for direct connection to a DAT. For more information, see the full review in *FM* 6.

It's the Falcon's built in analogue-to-digital converter that will no doubt give it the edge in the hard disk recording stakes, rather like the ST's built-in MIDI ports made that machine the popular choice for sequencing.

Other applications

Alongside its potential for professional-standard musical applications, the Falcon is being pushed as a weighty games player and graphics engine. With such good visuals and sound the other potential applications look promising: Kodak is interested in using the Falcon with its Photo-CD and video digitizers, and multimedia systems are also on the horizon, as are the more mundane but still high-powered business packages. The raw power and flexibility of the system mean it'll be doing plenty of other things too, depending on the imagination of programmers, from desktop publishing and art



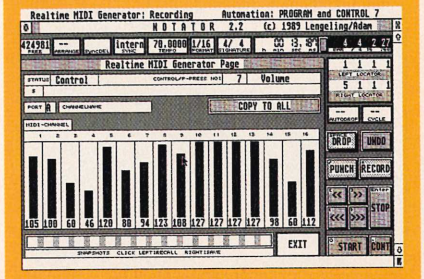
◆ The Falcon boasts too many graphics modes to list – among them, this impressive 65,000-plus colour, full-overscan true-colour mode. Stunning real-time effects are easy when you can individually address each pixel.

ATARI FALCON030
4Mb RAM, 65Mb hard disk, keyboard, mouse £1,199
VGA monitor £200-£300
Atari Corp UK, Atari House, Railway Terrace, Slough,

Sequencer software for the Falcon

***Notator Logic* ◆ £499**
by Emagic
from Sound Technology

Notator is currently running on thousands of STs, plenty of them in professional recording studios as the sequencing package of first choice. *Notator Logic* is a completely new version which has recently appeared on the Mac and is now available for the Falcon with nothing lost in translation.



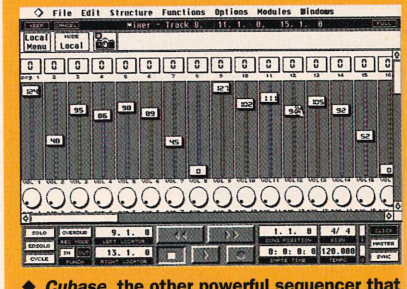
◆ *Notator's* real-time MIDI generator is one of the features that make it a favourite.

You can open nine different types of window, the main Arrange window holding the familiar list of tracks and transport controls. It has a powerful "nesting" feature that enables you to construct pieces from sections drawn from any part of your sequence. There's a full score-editing window and the environment window enables you to fiddle about with all your MIDI system's parameters – defining virtual instruments and setting up MIDI channels and the like. It's a complex and competent package that builds on the performance of *Notator*.

***Cubase Audio* ◆ £799**
***Cubase v3.0* ◆ £449**
by Steinberg
from Harman Audio

At the top of Steinberg's range of music software is the recently launched *Cubase Audio*. It merges the powerful *Cubase* sequencer with a direct-to-disk recording system, offering MIDI sequencing along with sample recording and playback all in one devastating package. Originally Mac-only, it's due to appear on the Falcon in about a month.

Cubase Audio makes full use of the Falcon's sampling power and digital signal processing facilities. Using a simple hardware extension to the DSP port, you get to access the eight tracks independently, with a further three for playing around with the DSP effects. There are two versions in the pipeline, one of which has been designed to be used with Yamaha's CBX-D5 hard disk recorder.



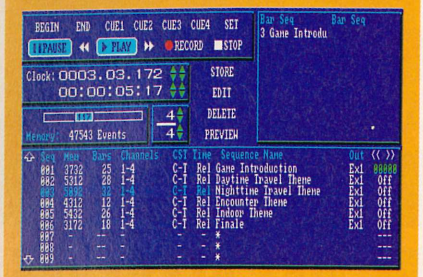
◆ *Cubase*, the other powerful sequencer that made the ST number one, hits the Falcon too.

Cubase itself, now up to version 3.0, is fully Falcon compatible – you can even run it in colour on a VGA monitor. Steinberg has made a strong commitment to the Falcon, developing software with it in mind for over seven months. The entire range is now compatible, with

Sequencer software for the Amiga

***Music-X* ◆ £199**
by Software Business
Although it was released over three years ago, *Music-X* still remains a firm favourite with Amiga musicians. Its wide range of tools and easy-to-use editing system make it a doddle, without sacrificing any sequencing power.

As well as 250 tracks for recording and

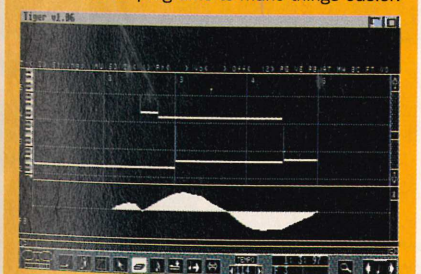


◆ ***Music-X*, a favourite Amiga sequencer, has a wide range of tools and easy editing.**

editing, there is a complex MIDI filters page (which enables you to map MIDI data however you want and set up MIDI keyboard maps), a System Exclusive data storage facility (so you can store synth patches on disk) and the facility to use Amiga samples in your sequences.

The editing system is based on a piano-roll grid, but for more detailed editing, you can go into an Event Edit screen to type data directly into a sequence. Arranging songs is a doddle too, since you can call up any of the 250 sequences and place them on an individual track, altering the pitch and repeating sections however you want. The whole arrangement system is similar to the Arrange window on *Cubase*, but *Music-X* got there first.

***KCS 3.5 Level II* ◆ £279**
by Dr T's
from Zone Distribution
If you want to go even further with sequencing, taking things up to a professional level, then *KCS 3.5* is for you. All the recording and arranging is carried out via a series of lists which hold the MIDI data, with editing commands being entered via the Amiga's keyboard. Sound a bit complicated? Don't worry. *KCS* features a whole suite of programs to make things easier.



◆ ***KCS 3.5 level II* features not just a sequencer but a complete package of programs.**

These all run under the Multi Program Environment, so data can be passed from one section to another without having to save to disk or quit out of a program. The extra programs include the *Tiger* graphical editing system (which enables you to manipulate notes, add controller information and set up instrument maps graphically), *Quickscore* (a notation printing package) and *Automix* (which acts as a mixer for altering the volume levels of your MIDI equipment in real time, storing the settings as part of a sequence).

The package is a bit more expensive than others and a bit bewildering for beginners, but it does offer a full range of professional tools

Eight years on from the launch of the original Amiga A1000, it's time for a change, and that change comes in the shape of the Amiga 1200.

The new machine has 32-bit architecture (rather than the previous 16-bit) and is powered by a Motorola 68020 processor, which is twice as fast as older Amigas' (such as the A500 and A2000). The on-board memory has been doubled, giving 2Mb of chip RAM rather than 1Mb (as was found on the A600 and A500 Plus machines), and you can upgrade this still further by adding PCMCIA cards to the slot on the left of the machine. The trap-door slot underneath the machine can also be used for adding extra memory, along with high-power co-processors to make the machine run even faster. For serious users, the fact that an internal IDE hard drive can be added is a definite plus – I recommend you get at least a 40Mb drive.

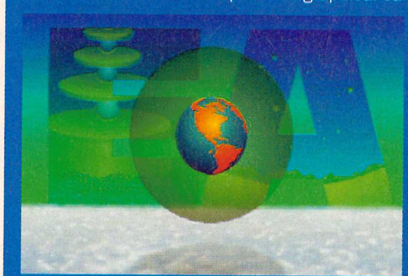
A new set of graphics chips (the Advanced Graphics Architecture or 'AGA') offers a palette of over 16 million colours, with 256 on-screen at once. Using HAM-8 mode, you can actually have over 250,000 on-screen at the same time, but this is with some fringing. As far as sound goes, the A1200 offers exactly the same capabilities as older Amigas – four channels, including the facility to play 8-bit digital samples – which has disappointed some people who expected DSP power. There is still no built-in MIDI interface, but these are pretty cheap – a Datel interface (with one In, three Outs and a Thru) is available for less than £20.

Even though the sound specs haven't been updated, the A1200 still sounds pretty impressive next to many other home computers, and the graphics capabilities are a winner. The improved graphics, processor power and memory make it worth upgrading from existing Amigas. For casual users, the choice between the four main formats is a tight one, but the Amiga should certainly figure as a very strong contender, particularly with its already large software library.

The A1200 is a very powerful and impressively featured machine, and at less than £400 for a basic model, it's got massive power at a relatively low price. There are music packages to please most MIDI musicians and the graphics capabilities are superb. Well worth checking out.

Other applications

One thing that is bound to win the Amiga 1200 a lot of admirers is its impressive graphical ca-



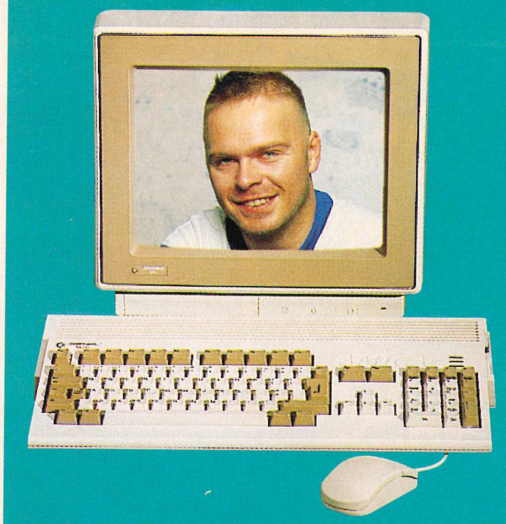
◆ ***Deluxe Paint IV AGA* helps you make the most of the Amiga's impressive graphics.**

pabilities. To make the most of these, you'll need to use something like *Deluxe Paint IV AGA*. This is a new version of the number-one Amiga graphics package, which has been updated to make use of the new graphics formats and should be part of every Amiga owner's library.

The Amiga also has a load of other uses, with word processors, video digitisers, desktop publishing packages, communications systems and many thousands of games available. Whatever you want to do, chances are the A1200 will help you do it.

Deluxe Paint IV AGA £99.99

Amiga 1200



Marcus Dyson, editor of *Amiga Format*, points to high power at low price.

More Amiga music

The facility to play internal samples means that there are quite a few sampling and sample playback systems for the Amiga. The best of these, Ramscan's *Audio Engineer Plus*, costs over £200 and includes top-range sampling hardware and a version of the superb *Audiomaster IV* editing software. If this is a bit out of your reach, consider *Technosound Turbo*. The software offers a range of editing tools and the hardware does its job very well (and you can always upgrade to *Audiomaster IV* software). For playing back samples, you could always use Amiganuts United's *MED* – it's only ten quid, with the eight-channel version *(OctaMED)* costing around £30.

For those wanting to use the Amiga as an editing tool as well as a sequencer, Dr T's *X-oR* enables you to edit a wide range of synth parameters and store them in a full database.
Amiganuts United, 169 Dale Valley Road, Hollybrook, Southampton, SO1 6QX

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2Mb RAM, mouse, keyboard £430, Colour Monitor £229, Commodore UK Tel: 0628 770088
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Supplier contacts

Here are the numbers of software suppliers mentioned in this article. If you want to write to any of them, you'll find addresses in the Buyers' Guide on page 85.

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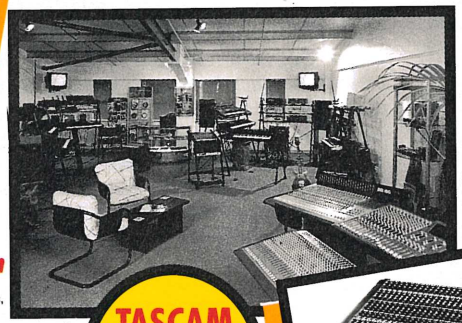

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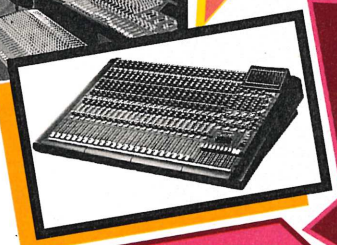

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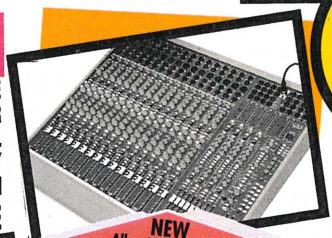

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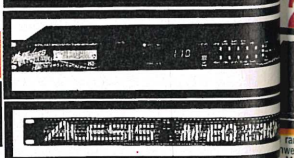

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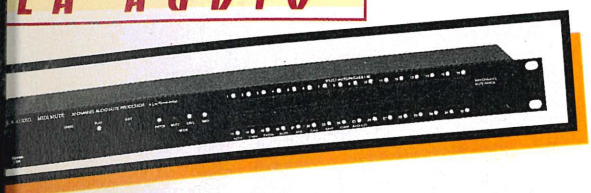

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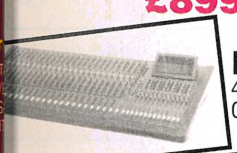

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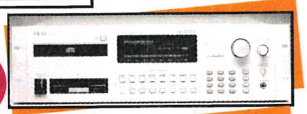

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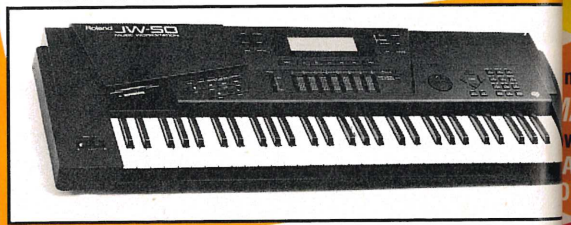

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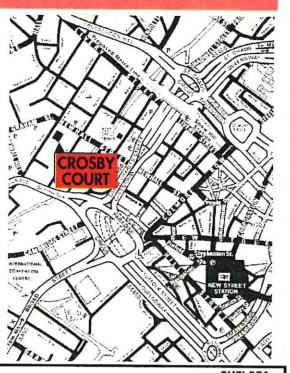

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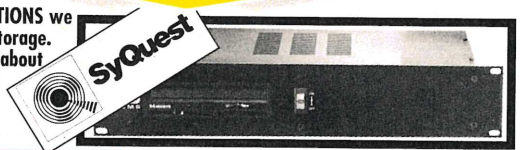

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Electro-flock treatment

Sheep on Drugs take *Aciieed* into the nineties with their up-front stage show. Maff Evans catches them on tour to find out how they transfer their sound to the stage.

YOU DON'T HEAR MANY high-tech bands citing themselves as rock and roll acts, but that's exactly how manic techno band Shèep on Drugs prefer to be regarded, especially when it comes to their live performance.

"What we do is rock and roll 1993," says singer Duncan, re-affirming Sheep's status as a 'proper' band. It annoys them that most people's idea of techno is just one or two people on stage messing about with analogue synths and mixers.

"When you come to see a band you want to see these guys up there doing it. Rock and roll isn't doing that," he adds, waving his arms in an impression of a knob-twiddling techno performer.

But the band still has a very high-tech sound, so how does it transfer to the stage?

"Everything's sequenced live," points out Lee, the man behind Sheep's music, "A lot of bands use DAT and I think that's a bit of a cop-out really. Where do you stop recording? You might as well record the lot and mime to it! If we used a tape it would be so easy, instead of taking thousands of pounds worth of equipment on the road everywhere." So apart from the moral question of playing to a tape, why don't they go for the easy option?

"We can't use a DAT," says Lee, "It's impossible, because I'm putting the guitar through a MIDI gate, which we can't do with a DAT because it can't support MIDI."

Even though the sequencers control the backing, the band still has a strong live element to the performance, as Lee explains: "All the guitar is played live, as are the vocals. We use a drummer live as well for added impact, although it helps visually as well. He's using an Octapad and that's triggering a separate Pro-cussion module from the one that we used for the sequenced drums. There's a real snare, real hi-hat, real cymbals – which are generally the things which you'd want live. He doesn't use a kick drum live though. We used it one tour and because of the bottom end flamming you just can't listen to it. He's got to play a kick drum obviously, because he's a drummer," agrees Lee, "So that's going into the Octapad and he puts it into an inter-loop. Where there's no sequenced drums going, we'll plug it back in and get a bit of a groove going."

Mobile studio

To get the right sound on stage, Sheep on Drugs rely on the use of a lot of their studio equipment while on tour.

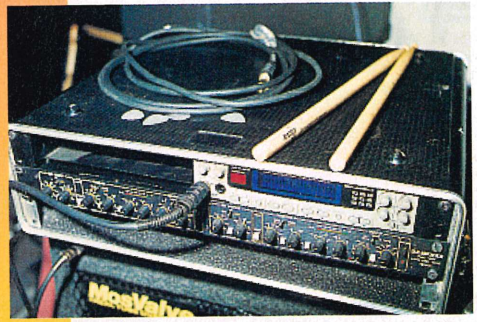
"The rack on stage is the rack I have at home," says Lee, "I use *Cubase* to do the songs at home and I take the whole gear into the studio, so it's like taking the studio on the road. On our last single there was a [Roland TB-]303 and a few analogue synths going which you obviously can't effectively run live, because you can never get exactly the same sound out. If we had three hour sound-checks we'd be alright."

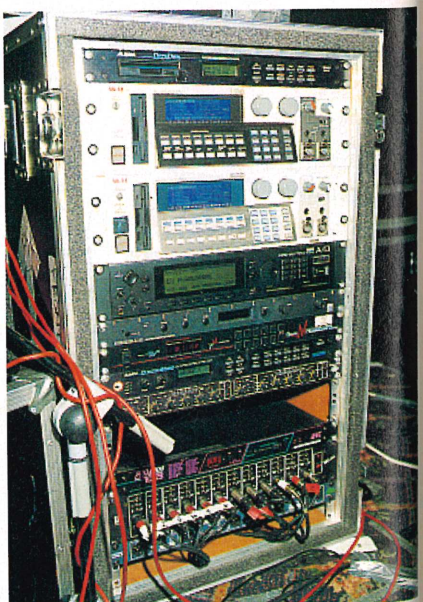
So how do they get around the problem of using analogue gear?

"Generally for things like that we'd sample it up and use that for live," explains Lee. "It's only things that you can't repeat live – like an analogue synth sweep that has to be the same to make it work, but we're not really running any analogue stuff live. Maybe on the next tour."

The rack is currently being driven by an Alesis Datadisk, but this isn't the set-up that the band would ideally choose for their live sequencing as Lee points out.

"I've been doing the stuff on *Cubase*, dumping it on to Datadisk and running it from there," he explains, "but because it's only coming out of one MIDI port there are slight delays. I wasn't worried about it on this set, but on the next tour I'm taking the Atari [ST] with Midex, so that there are no MIDI delays."





◆ The Roland SH-5. A hefty-looking beast, but home of some wonderful analogue blurps and beeps.

◆ Lee adds percussion using MIDI triggers (Octapad and Visu-lite cymbals) and Rototoms for fills.

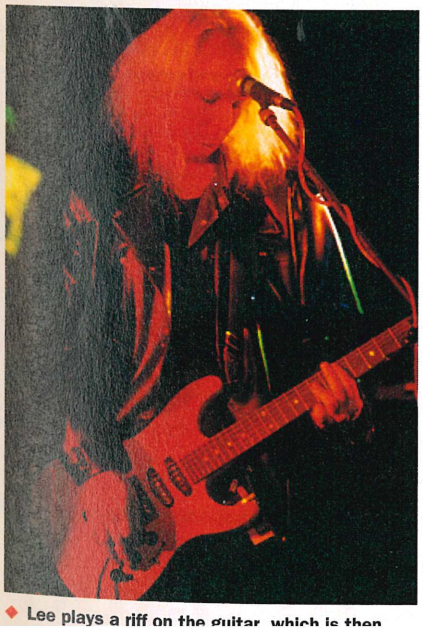
◆ Duncan tries to gate the vocal by 'chopping' the cable (probably).

Although a lot of the equipment used by the band seems fairly modest next to the enormous rigs of some acts, it's the way it's used that makes the Sheep's sound that little bit different. With a bit of effort, the band push the machines to see what comes out, so that they are capable of getting a powerful sound out of less gear.

"The effect on the sub-bass is from editing single sounds [on the Pro-cussion]," says Lee by way of an example. "If you tune them right down and put some attack on them, this wicked sub-bass comes out, so the Pro-cussion is playing all the sequenced drums and the sub-bass. The [Akai] S1100 is playing the break-beats, because it's tighter than the S1000. The S1000 plays all the sound effects and a few synth samples – the stuff that I've sampled rather than having a synth playing live."

"They've both got 32Mb in as well," says Duncan, "so we can have some nice long samples. It means we can do stereo effects as well, and on a PA that's great. If a sound goes from left to right it really does go from the left of the stage to the right."

Duncan is also quick to point out that the potential of the gear is not usually realised by those who always go for the biggest and most expensive options: "The equipment we're using is so powerful in the job that it's doing, which is basically providing a rhythm section and the keyboard lines, then it's down to me and Lee to provide the edge. That's where we're winning over bands like 808 State. They've got no way of doing anything like what we're doing live. We're coming from the angle that bands have always come from, but we've embraced all the technology and decided what we want up on stage. I don't want a bass player up there when we can play Lee's sequenced bassline, because they'll never be out of time."



◆ Lee plays a riff on the guitar, which is then

As far as the performance goes, the only real trouble that the band have with transferring the sound to the stage is the complexity of the vocal line.

"I've been recording the vocals into an Apple Mac using *Cubase Audio* with Gareth Jones, our producer, and that's really good because I don't have to do the vocals actually in the studio – we just program them. It's good because you can have four tracks of vocal coming out. The thing is it's difficult getting that many words out live – singing for an hour non-stop."

Lee explains how they get around this problem on the road: "With the words that there's no way Duncan can sing, we just use one-word samples that come out on the beat and I do the backing vocals on some of the songs. I do them on *Fifteen Minutes of Fame* anyway, but that's an idea that we've started to come round to. The way for Duncan to get a breath to sing the next line is for me to start doubling up."

Out in front

By now you may have guessed that Lee and Duncan take a lot of time before going on the road to make sure that the live sound is spot on, but that's not where the work stops, since the band mix everything live.

"Everything is through a separate channel – the kick, the snare – everything is separated and mixed by the out front engineer," explains Lee. "We were thinking of sub-mixing, but you get more dynamics if the out front guy's got everything. What he is basically doing apart from balancing the sound is putting a bit of slap-back echo on the vocals, panning the guitar around – doing what an engineer should do. He's got a couple of effects he'll be putting on guitar and maybe an echo at one point on the vocal, but he's not putting any effects on the backing track."

"He's got a mental job mixing it live," says Duncan with a smile, sympathising with the band's live engineer.

"He's riding things live," Lee continues, "because you can't program everything to run completely flat. The tiniest volume difference at studio level, when you boost it up to massive levels you think 'Oh, that's too quiet,' because the difference is really amplified. That's why we like to send everything separately."

Careful mixing is the key to the power behind Sheep on Drugs' powerful live sound, even though they actually use relatively few effects.

"I've noticed that if it's really compressed it pokes out that much better. The MIDI gate might be used to cut off the guitar to make sure that the note goes 'BAM!' at the end with no sound coming out after it," says Duncan, "Or it might be used to chop it up. It's nice when it's such a clean production, because it's a very bright sound as well. Even when you put it on a little home stereo it goes 'BANG!' – right out. It's not a mess, everything is so clear."

Lee agrees that this is a major point about their songs: "The problem with a guitar is that it's such a big sound. Using a guitar open with songs like this, that have a lot of detail, it covers it up, which is annoying because you lose a lot of the nuances."

This is most certainly one advantage that the band has over many other techno bands when playing live, but it is just one aspect of the formula that makes it such a powerful live act. The slamming rhythm gets the crowd moving, the sharp sound makes it stand out aurally, the flexibility of their set-up means that they can make more of an effort with their playing, and the performance element makes it a show for everyone.

So is Sheep on Drugs the nearest thing to acid meets rock and roll in the nineties? Well the techno rhythm is there, the wild noises from acid belt through the mix and they have the stage presence of the most demented rock and rollers you can think of... in other words, it could well be. FM

Sheep on Drugs' live set-up

Lee's gear
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Roland SH-101 synth
Roland SH-5 synth
Roland SPD-8 drum pads
Visu-Lite MIDI Cymbals
Roto-Toms

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Akai S1000 and S1100 samplers
E-mu Pro-cussion percussion sound module
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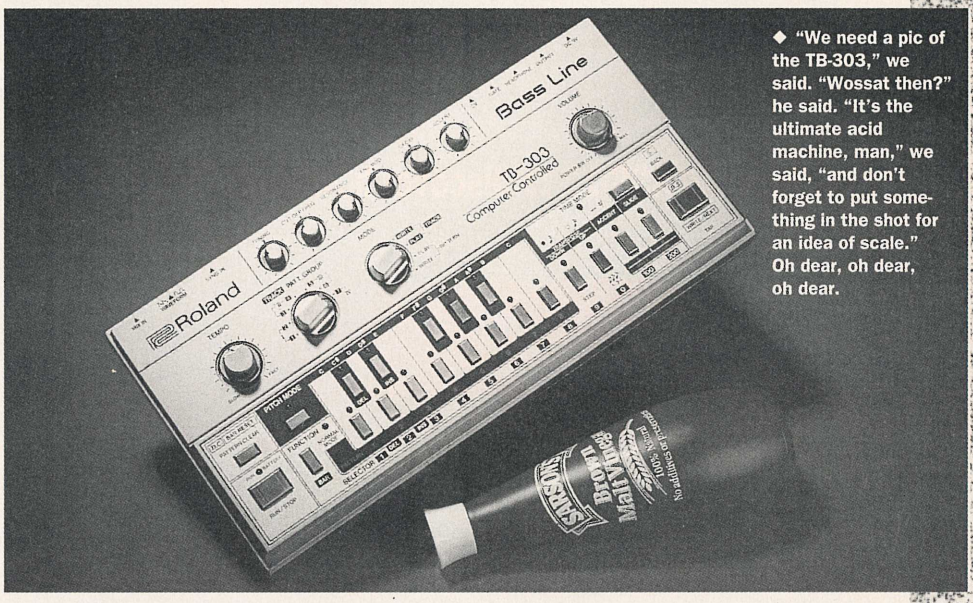


◆ "We need a pic of the TB-303," we said. "Wossat then?" he said. "It's the ultimate acid machine, man," we said, "and don't forget to put something in the shot for an idea of scale." Oh dear, oh dear, oh dear.

It's small, silver and a vital ingredient to any acid party. With the Roland TB-303 at his fingertips, John Molloy puts his baseball cap on backwards and raves 'til dawn.

OF ALL THE RETRO GEAR currently around, the Roland TB-303 is probably the first to achieve underground cult status. It was launched in 1983 as the bass partner to the Roland TR-606 Drumatix. Unfortunately, it produced sounds that nobody wanted, and was so difficult to program and painful to use that the device disappeared within two years.

But tastes change and, ten years on, the TB-303, or 'Bassline' as it was affectionately nicknamed, is back. It is still almost impossible to program and awkward to use – but its bass sound is pure acid. No wonder it's very hard to get hold of these days.

The Bassline is a silver plastic unit the size of a small box of chocolates, and it weighs about a kilo. The upper section of the machine is the synthesizer, the lower part is the programming section with an octave keyboard of sorts, while the bit in between contains the overall controls, such as tempo, volume, pattern selection and mode settings. The TB-303 is battery-powered, and you can also run it from the mains using an external 9V power supply.

Function overload

Small though it is, the box is covered with buttons and little red LEDs. One of the Bassline's most infuriating drawbacks is that a lot of the buttons have more than one function, so you have to be aware of exactly which mode the machine is in when you are working on a piece.

On the back panel you find the connections to the outside world. One of the things that made the Bassline interesting when it first appeared was that you could connect it to other synthesizers and drum machines – this was in the days before MIDI, remember. The sockets from right to left are: DC 9V in, Audio out, Headphone out, Gate and Control Voltage out, Sync in (a 5-pin DIN socket for DIN sync) and Mix in (a jack socket that could be used to combine the output of the TB-303 with any external sound source so that, for example, you only require one input into your amp for both your Bassline and your Drumatix).

> *"It is still almost impossible to use, but its bass sound is pure acid."*

The synthesizer section of the machine is very basic but it is the heart of the acid sound. First of all, you can tune the machine over quite a range, so it's not just bass parts can be generated – little acid top lines can be squeezed out too. The TB-303's features include a switchable waveform – either sawtooth or square; a good VCF with analogue controls (knobs) to adjust cut-off frequency, resonance and envelope modulation; a very basic envelope generator (you can only alter the decay rate); and a knob which sets the amount of accent.

Programming takes a fair bit of effort because you have to enter the four basic elements of a note. These are pitch, duration, accent (on or off) and slide (this is an optional portamento, originally put in to execute fretless bass-style slides between notes which is now misused to produce those ultra-weird bass lines). So, keying in a particular rhythm part takes at least three separate jobs for each bar.

First, you program the pitches. To do this, you press the keys on the one-octave keyboard in the order you want to hear them. Each track has a possible four-octave range. You can transpose the keyboard up and down an octave and the pattern can also be shifted up an octave when in 'track mode'. Next, you program the rhythm. This can be done in step time or real time. In step time, each step can play the sound, sustain it or insert a rest. In real time, the TB-303 beeps merrily at you while you apply your right index finger to the tap button every time you want a note to play. Once you have the basic pattern in, you can then apply accents and slides.

Each of these patterns is a bar of music which can then be chained with others to build up more complex bass lines. The machine holds a maximum of seven bassline tracks – but it's likely that most machines out there only ever hold a few patterns. The machine can take a DIN sync signal and record direct on to tape.

Because of the CV and Gate outputs on the Bassline to sequence any analogue gear you have with the right inputs. So you can use the machine to do quite complex things in the studio.

The way that new bands appear to use the TB303 is to ignore the formal method of programming the box and let a bit of chaos theory go to work on the line. To achieve this, you clear out the pitches and insert new ones at random. Do the same with the rhythm, accent and slide and then let the machine go its own sweet way. Adjusting the analogue controls while recording the part gives the music even more of an analogue feel and gives you the perfect answer to death by digital perfection. **FM**

Tech Specs

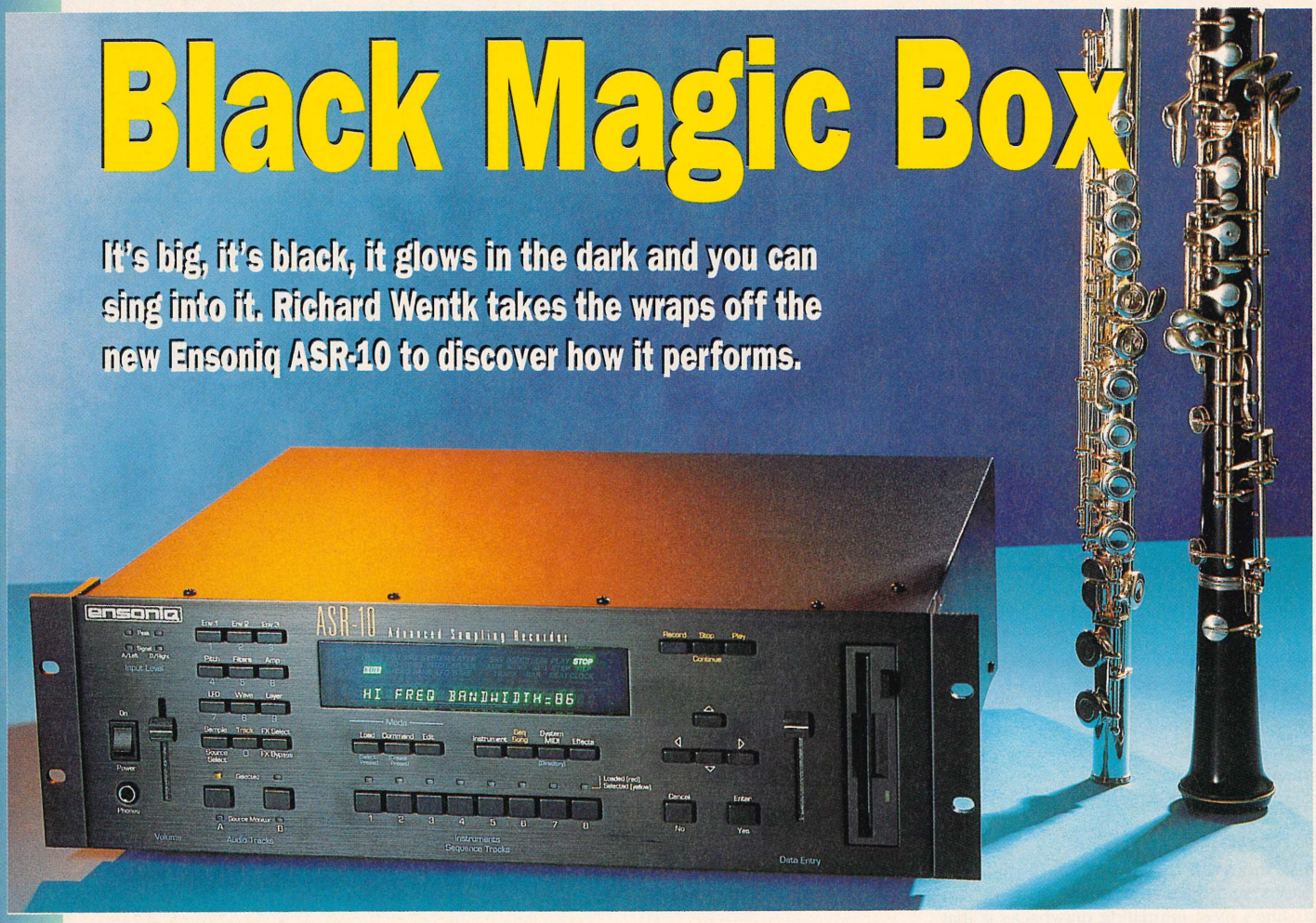
Sequencer
Seven tracks, each with up to 64 patterns – 256 measures maximum.
Sequencer tempo 40-300 bpm
External Sync in.
Synthesizer
Tuneable, single-oscillator synthesizer with switchable waveform, sawtooth or square wave. VCF with variable cut-off, resonance controls, envelope modulation. Variable decay envelope and variable accent control.

Price and availability

Roland TB303s are only available second hand – they were discontinued after only 18 months of production. Six months ago you could expect to part with £125-£150 for one. These days, because of the revival in acid music, they have almost doubled in price and are very difficult to find.

Black Magic Box

It's big, it's black, it glows in the dark and you can sing into it. Richard Wentk takes the wraps off the new Ensoniq ASR-10 to discover how it performs.



ENSONIQ – PURVEYOR OF SAMPLERS to the music making masses for nearly a decade – has done it again. Building on a reputation for compromise-free programming and innovative design, the latest offering is the ASR-10, a feature-packed monster based on the same programming system and panel layout as the earlier EPS-16 Plus, but enhanced with a clutch of powerful new extras.

It's obvious right away that this is not a beginner's machine – unless you're a beginner with a brain the size of a small asteroid. In fact the unit comes with a pile of manuals slightly thicker than a phone directory. Having said that, once you find your way around, the ASR-10 isn't too hard to use, but the operating system has thousands of commands and options and perhaps – just perhaps – they could all have been laid out a tad more clearly. Even with the helpful tutorial and essential sound booklets, beginners are likely to feel discouraged from making full use of the beast. This is a shame; for those who can hack it, the ASR-10 is one massively creative and powerful music tool.

The basic ASR-10 comes with 2Mb of RAM, expandable up to 16Mb using standard SIMMs (Single In-line Memeory Modules, but Mac style, not PC) available from any decent computer shop. If you don't mind voiding the warranty you can fit the SIMMs yourself. It's straightforward, but Ensoniq recommends that you get a qualified techie to do it. Sample time with standard memory is 31.5 seconds in mono (15.75 seconds in stereo) and can be expanded to four minutes and 12 seconds in mono.

Drive hard

A SCSI port is included, so you can hook up any SCSI-compatible hard disk drive, and if you're using the full memory you'll need it, otherwise you'll be swapping floppies from here to eternity. Each floppy can hold a maximum 1.6Mb which means that you'd need ten for a complete memory dump – possible, but not convenient. A separate manual explains how to choose a hard disk drive and what to do with it once you've plugged it in, but if you're not already familiar with this side of computer technology you may need some extra help to get it all up and running.

The sampling options are quite comprehensive. Once you've grabbed your sound you can trim it, normalise the gain, loop it

ASR-10 at a glance

Polyphony	31 voices @ 30 kHz, 23 voices @ 44.1 kHz
Resolution	16 bit
ROM effects	50 algorithms
RAM	2Mb expandable to 16Mb
Sampling time	31.5 secs (mono) expandable to 4.2 mins (mono)
Instruments	8 in memory at once (max)
Samples	127
Sequencer	96 pulses per quarter note, up to 80 sequences per song, 8 tracks
Disk drive	1.6Mb quad density. SCSI port (optional on keyboard version)
Connectors	All audio on 1/4-inch jacks
Size	15.8 X 5.7 X 1.7 cm
Weight	18 kg

The keyboard option

The ASR-10 also comes in a keyboard version. Unusually the keyboard responds to poly-pressure (each individual note is pressure sensitive as well as the whole keyboard) but lacks the SCSI port, digital I/O and extra outs, which are all available as options. However, it does come with a built-in mic amp, so you can karaoke to it (if you really want to) or use it live for rap/house backing.

SCSI port: £249 (including installation)
OEX-6sr extra outs: £199
Digital SP/DIF I/O: £TBA

timestretch it. The timestretch is slow, taking quite a while to stretch long samples, and loses coherency when working in stereo. Fortunately, a planned upgrade should solve this problem.

You can modulate various sample playback parameters live, including loop start, position and pitch. Samples can play forwards, backwards or with a variety of looping options. There's loop and release mode which loops until you release the key, and a neat 'Transwave' looping option which makes wavesequencing effects possible.

You get 31 notes of polyphony (or 23 at the ultra-high sampling rate – but most of the time the lower rate is fine) split across eight instruments. An instrument is Ensoniq's name for a patch, and it can consist of up to eight layers of up to 127 wavesamples (the actual sampled sounds) set up across the keyboard.

The programming power behind each

generators, two filters with either high or low pass settings, but no resonance (shame!), a digital oscillator, a very flexible LFO, and a stereo amplifier (so you can bounce sounds around from left to right). There are more modulation options than you can shake a patch-cord at, including MIDI key number, a variety of internal sources (including LFO, envelopes 1 and 2, and so on), MIDI key-down and key-up velocities and a useful noise source which provides a random signal. This may sound odd, but if you add just a hint of this to the oscillator pitch your sound suddenly comes alive – very nice. Put simply, when programming if you ask "Can I...?" the answer will almost certainly be "Yes!"

Like a lot of recent products the ASR-10 lets you sample and edit in stereo. There's even an optional digital I/O card for sampling and playback that bypasses the converters, although its price and availability haven't been decided yet. There is no sample reserve feature to prioritise which samples get cut off when you run out of voices, which is a significant omission. A neat programming feature enables you to link all the layers and wavesamples in an instrument together for editing, so changing the attack time or filter settings of a complete sound doesn't leave you scrabbling among ten-thousand parameters – a life-saver in tense studio situations. Even at 30kHz sample quality is superb and on the rack version you get a set of three auxiliary outputs – useful if you want to route your music through some external processing.

Personal effects

The unit comes with a range of built-in digital effects. These have been culled from Ensoniq's highly rated DP/4 effects processor and they are very, very good. You get 50 different effects including some rather nice reverbs (gated, roomy and otherwise), multi-tap and straight delays, exotic distorted wah-type sounds, a range of guitar amp and speaker cabinet simulations, some smoothly shimmery chorus, phase and flange effects, an exciter, a couple of pitch shifters and even some dynamics processing (compression, expansion, and gating). The effects are MIDI controllable, so you can have fun patching delay time to note number and other fancy effects. Any parameter can be modified over MIDI, so it doesn't take much to get some really wild sounds – strange whooshes, manic filter sweeps, sequenced sample-and-hold type burbles and Hendrix-in-a-box guitar simulations.

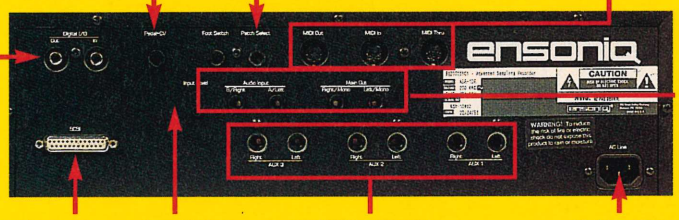
Better still, you can sample from the output of these effects. There are some massive industrial sounds to be had from the pitch shifter or the filtered distortion and the compressor/limiter is hugely useful when sampling 'difficult' live sounds. You can even resample the output of the ASR-10 back into itself via the effects, which yields cracking results. If you program a back beat using percussion samples, you can sample it back – with effects processing – and use it as a single loop, or you can use the same feature to create a monster synth stack. The manual also includes hints on how to use the ASR-10 as a digital portastudio – which, although will be limited by memory, is a great idea.

The built-in sequencer is fairly basic with

Fiddle with the front

Parameter select button panel: Pick which part of a patch you want to edit here.
Extra large display: Lots of numbers and flashing lights. Very pretty in the dark.
Other mode buttons: As Mode Buttons, but also bring up different directories on disk.
Sequencer controls: Used for controlling the built-in sequencer.
Input level LEDs: Signal and peak on both inputs.
Scroll buttons and data entry: Used to zip around the menus.
Volume slider: Master output control.
Audio track controls: External sounds come through here, with or without the built-in effects.
Mode buttons: Selects the required edit mode.
Instrument/track buttons and LEDs: Select and indicate the current instrument and sequencer track.
Data entry slider: Change 'dem parameters.

Sample the back


Digital I/O: Sample from a digital source or digitally record the ASR. Costs extra on both versions.
Pedal/CV: Expression controller, or hook up to an analogue synth for extra control.
Patch select: Choose one of four layer options with a footswitch.
MIDI ports In, Out and Thru.
Main input and output: Stereo in to and out of sampling and effects section.
SCSI port: Standard on the rack, extra dosh on the keyboard version. Plug in a hard drive here.
Level trim: Used for level matching
Auxiliary outputs: Three pairs of extra outputs for unprocessed samples.
Mains connector: Special low-noise type.

You only punch-in on a track by hand, which is disappointing if you're used to working with a software sequencer, but you can edit individual events and even delay or 'push' tracks relative to each other. Sequencer memory is shared with the samples, so care is needed when using loads of sounds, to avoid running out of space.

MIDI support is excellent. You can do all kinds of useful remapping tricks and even use the ASR-10 as a MIDI data filer to save and load Sys-Ex dumps from your other gear. There is a 'Multi' mode for multi-timbral use and a special mono mode for use with a guitar controller. Full legato is supported, so you can bend notes and change their pitch without retriggering them. Curiously, program changes make the unit look for the equivalent numbered instrument program on disk, since you can't have more than one instrument in each location. This might just about work with a SCSI drive but is a bit clumsy on floppy.

It all sounds rather impressive, so what are the drawbacks? First, this machine could be easier to get into. The main manual reads like it's been written by someone more familiar with the inside of a microprocessor than the inside of a teaching guide. Secondly, eight instruments seems a bit limiting these days, particularly in a multi-timbral setup. Finally, it's not that cheap, but you do get a lot for the money when compared with some other samplers.

In the end, though, these are minor niggles. However you look at it, this is a monstrously powerful and creative piece of music technology. If you're about to ramraid your piggy-bank and head down the high street in search of sampling heaven,

Ensoniq ASR-10

MIDI stereo digital sampler
£2,345 ◆ Sound Technology, Letchworth Point, Letchworth, Hertfordshire SG6 1ND. ◆ Tel: 0462 480000

Verdict

Features

Ease of Use / Setting up

Quality of results

Value for money

Rather complicated for many people, but still an excellent and superbly powerful sampling and digital effects unit.

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Alternatively...

The main challenger here is the new Akai S3000, which offers similar polyphony and RAM but fewer and less interesting built-in effects. Although there is the option of a cut-down S3000 in the shape of the S2800 for nearly £150 less, RAM expansion on the Ensoniq uses cheaper off-the-shelf RAM modules, so a fully expanded system will cost less. Also, if you want the full set of outputs and SCSI on the Akai, you need to go for the S3000 at £3,000, with the SCSI as an optional extra. Having said that, the Akai is just that bit friendlier and has resonant filters.

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Music

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Join us on a trip into the world that lies 'twixt synth workstation and home keyboard. Our vessel is Yamaha's PortaTone PSR-5700, and David Robinson is our pilot...

THERE HAVE BEEN SEVERAL SORTIES into the land of the cross-over synth-keyboard. Roland started the migration with its E-Series keyboards, and Yamaha's PSR-SQ16 recently followed them. The new PSR-5700 also lives in this strange domain – slightly closer to the high-spec keyboard end, but with its disk drive, General MIDI layout, LCD screen, 8-track sequencer, 100 editable sounds and 48 digital effects, it's certainly not *just* a keyboard. And the accompaniment section is more than just a simple case of start, fill-in and stop: clever programming enables it to react to how you play, and if you stop playing altogether, it plays the song for you.

Performance first

The first thing you notice is the enormous number of buttons and pads on the 'dash'. The 5700 is designed as a performance instrument, and the ease of control you need for live situations is certainly there. For a start, there are 16 memory locations to store complete keyboard set-ups, called Panel Registrations. Save all your settings, including those for voices, accompaniments, volumes and controller operations (pitch bend and modulation) to a memory, then press one, or at the most two, buttons, and those settings are recalled and you're ready to perform. Similarly, Voices – Yamaha's chosen name for pre-sets – can be combined in a dual or split-keyboard fashion and stored in the ten Voice Registration memories for rapid recall. Two keystrokes access your favourite, or most-used, combinations.

Some home keyboards have dedicated buttons for sound effects – so you can conjure up a quick round of applause for yourself, even if you don't deserve one. The 5700 goes a step further with its eight Pad buttons. These have three uses, again aimed at enhancing your live edge: you can program them to play percussion sounds, so you can drum along with your rhythm track (or cue that reassuring canned audience); use them to control the rhythm accompaniment in real time; or use them in Multi mode. Multi means that four of the pads will store and recall a sequence of up to 80 chords for playing with the auto-accompaniment, and four will record and play back short stings or jingles (called Phrases). A couple of the preset Phrases are the sorts of thing that play when a game-show host enters; they are just begging to have even tackier fanfare or 'Stripper' type stings programmed in...

The accompaniment section provides you with 36 different backing styles – mainly the traditional types, with a few concessions to the present in the form of Euro Beat, Dance Pop and Party Pop (yuk). There are shuffle, 8-beat, 16-beat and waltz styles among others, and of course the obligatory Bossa Nova and Slow Rock, so we're really talking piano bar or cabaret territory here. Hit the Auto Bass Chord (or ABC) button and you can play any of three different types of accompaniments along with the drums: in Fingered Chord type you play whole chord shapes (the 5700 recognises 24 types, including that ever-popular Minor Major Seventh Ninth) while it fills in the three accompaniment voices (bass and two orchestral parts); Single Finger mode plays the extra comping bits again, but you only have to use the minimum of fingers to play common chords like majors, minors and sevenths; and in Manual Bass, you do practically all the legwork.

Each style has many variations: an intro, or as links between verse and chorus variations. You select these yourself, or alternatively use the rather special 'Interactive Accompaniment' to do the job.

◆ The PSR-5700 is an up-market board with a price tag to match, but its performance is outstanding.

Interacting up

The Interactive mode enables the PSR-5700 to react to what you play. If your keywork gets more frenzied, it will select a busier chorus variation to complement you; drop your playing down a notch, and the keyboard switches to a more sedate verse variation. If you stop playing for a few bars, the solo variation cuts in and vamps for you, until you touch the keys again.

There's some imaginative programming in the accompaniments, especially the fill-ins, and the sampled drum sounds and 10W onboard speakers mean you can give some punch to your sound. The plentiful polyphony – 38 notes – means you don't run out of notes, even with busy accompaniments.

Interactive Accompaniment takes a while to get used to, but will work well in a performance environment. You might find you have to restrain the solo function though, because sometimes what it plays (always the same for a specific style) doesn't fit the exact mood of your song all the time. ◆◆

Compatibility

The PSR-5700 has one memory location designed for eight-part multi-timbral use, so you can play its sounds from an external controller or sequencer. Similarly, you can play other modules or synths using the 5700's keyboard or sequencer as the driver. All those groovy accompaniments are not transmitted, though.

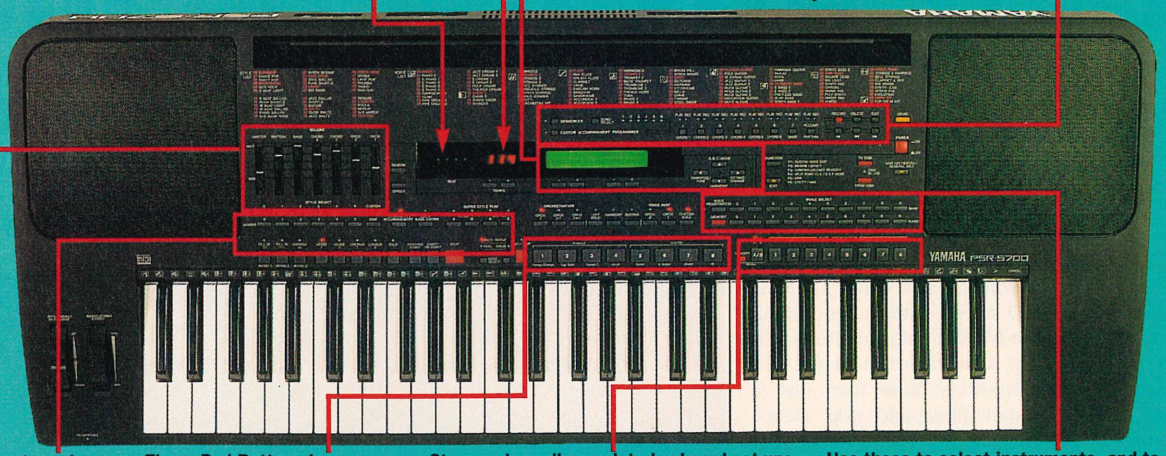
Slot a PC-formatted disk with a Standard MIDI File (SMF) on it into the disk drive, and the PSR-5700 plays it. (This information takes some tracking down in the manual, but it's there.) More useful for live work is the compatibility with Yamaha's *Disk Orchestra Collection* (DOC) software, as used on the Clavinova CVPs, PSR-6700 and PSR-SQR16. These are song arrangements written especially so you can play along with them (unlike SMFs, which are usually complete tracks). Play the left-hand part, the right-hand part, or both even, and the 5700 supplies the rest. There are around 500 DOC songs available.

On the back of the PSR-5700 are a couple of Aux In sockets, so you can plug in another source – say, another keyboard, or a CD player – and amplify that too. Play with a friend, and all without additional monitor speakers

Effects

You have a choice of 23 reverb and nine chorus effects to enrich the sounds; the strength (or depth) of each can be edited too. You can bypass effects quickly by pressing two panel buttons. A further 'effect' is the Harmony function: the 5700 forms chords around the melody note appropriate to the key being played by the auto-accompaniment. There are 16 types available, including things like Jazz En-

The board walk


LEDs flash in a beating-time sort of way.
This displays the tempo, or the chosen function.
LCD, increment/decrement and function keys, central to editing and selecting on the PSR-5700. A data slider would have been handy.
Record and play your own sequences and custom accompaniments with these buttons.
Volume controllers for the Rhythm, Bass, Chord Accompaniment and 'Orchestra' sounds (the voices you select to play from the keyboard), so you can get the mix just right at performance level. Good thinking, chaps.
Choose your accompaniments and rhythms then start and stop 'em here.
These Pad Buttons have a variety of uses for live work.
Store and recall complete keyboard set-ups using these Panel Registration keys.
Use these to select instruments, and to save and recall up to ten combinations of instruments.

It's great to see the mixer controls on the left-hand panel, enabling you to balance the volumes of all the parts quickly while you're playing. And, in keeping, with the emphasis on performance facilities, there are four 'Super Style Play' buttons which are there to store and recall set-up information (voice choices, effect types, volumes and so on) for each style, rather like the Panel Registration keys.

If you get bored with the factory accompaniments, you can program six of your own, including all the verse and chorus variations, and save them as 'Custom Accompaniments'. More can be saved to disk. The available edit functions are limited to the bare necessities: quantise, set levels, name style, copy and delete parts.

Sounds good

There are 100 AWM (sampled) sounds on the PSR-5700: 90 of these are single instruments or sounds; eight are useful combinations, like Strings & Harpsichord; and voices 98 and 99 are drum kits, standard and 'pop' – which means the standard kit with some 808-type snares, claps and kicks. The sounds cover a limited range – keyboards, voices, strings, wind, tuned percussion, guitars and synth sounds – and they're all pretty damned good, practical and useful sounds rather than anything flash. The piano is bright, the brass and woodwind are authentic and the string ensembles are rich; very little is at fault, in fact – there's perhaps a little too much plectrum strike on the Rock Guitar, but that's about it.

The pad sounds – whether choirs or synth pads – are very usable, and there are some surprisingly strong Moog-style leads, if you're in the mood for some unashamed synth heroism.

All of the 100 voices have been copied into RAM so you can customise them. You can't make dramatic changes, like select a different basic waveform, but you can do enough to make them 'your own'. The usual pan, pitchbend and modulation controls are here, plus parameters you find on a synth, like volume envelope attack, decay, sustain and release, and, surprisingly, reasonably powerful cut-off and resonance controls – powerful enough to make the speakers rattle, at any rate. You can edit the custom drum kits to a small extent as well: re-tune percussion, change pan positions, and alter the tone of the instruments.

Hit the General MIDI button, and you're in GM mode. You get the 128 sounds required by GM, but most of the other functions are disabled: for instance, you can't use GM sounds with the sequencer or the ABC and rhythm accompaniments. The GM mode is only really useful when you're driving the keyboard from an external source, or playing back MIDI files loaded from disk.

The on-board sequencer is more than just an afterthought, as it seems to be on some keyboards. You can record six 8-track songs (or a total of 7,000 events – not huge, but ample) and, as with the custom accompaniments, save more to disk. Editing is more comprehensive here: copy, delete, quantise and set levels, as with the accompaniments, but now you can perform note shifts and bar inserts

What the PSR-5700 does, it does very well indeed. The choice of rhythm styles may not be as radical as on some keyboards, notably the PSR-SQ16, but this is a tell-tale sign of who want a full-blown synth workstation, but want more than a run-of-the-mill home keyboard to turn in a polished and professional performance. If you play in a club, in a bar, or just in front of your granny, you'll be very impressed with the flexibility all those features give you – disk drive, sequencer, effects, General MIDI, quality voices and intelligent accompaniments – it's all there. The price may seem steep, but you're getting a lot for your cash. Test drive one soon. FM

Yamaha PSR-5700

PortaTone keyboard
£1,599 ◆ Yamaha-Kemble, Sherbourne Drive, Tilbrook, Milton Keynes MK7 8BL ◆ Tel: 0908 366700

Verdict

Features

Ease of Use / Setting up

Quality of results

Value for money

Loads of features and quality sounds, with great potential for customising, but you do pay for it. Excellent for taking out live, too.

FUTURE MUSIC RATING 85%

Alternatively...

The Technics KN1000 (£1,549) offers similar features, though it hasn't got General MIDI. Roland's E-70 (£1,399) conforms to the General MIDI specification (so polyphony is reduced to the minimum of 24 notes) and it doesn't have a disk drive. If the over-the-grand mark is too high, there are cheaper keyboards, but you lose out on features.

◆ Roland, tel: 0252 816181
◆ Technics, tel: 0344 853174

Tech specs

Polyphony	38-note. Plenty, in other words.
Keyboard	5 octaves, velocity sensitive. No aftertouch.
Voices	100 Pre-set, 100 Custom
Effects	23 reverb types (including echos and delays); 9 chorus types (including flanging and tremolo); 16 harmony types
Sequencer	8 tracks, 6 songs (7,000 events in total)
Disk Drive	standard 3.5-inch double-sided, IBM PC compatible formatted: compatible with DOC (Yamaha's *Disk Orchestra Collection*) and General MIDI software
Amplifier	10W x 2
Weight	15kg
Supplied Accessories	Music stand, FC5 Foot Switch, Sample Data Disk, two manuals (basic and advanced)

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MQX32M	£229
CMS101	£64
CMS102	£80
CMS104	£100
CMS 401	£80
CMS 401-II	£116
CMS 401 to 401-II Upgrade	£30
CMS 444	£230
CMS 444c	£292
CMS 444 to 444c Upgrade	£55
Midiman MM401	£79

External MIDI Interface

Key Midiator 101	(Serial)	£109
Key Midiator 124	(Serial)	£149
Key MP128	(Parallel)	£175
Key MP128 Upg		£116
PortMan	(Parallel)	£119

Sound & Drum Modules

ROLAND SC-7	(Serial/MIDI)	£270
GMX-1	(Serial/MIDI)	£229
ROLAND CM300	(MIDI)	£370
ROLAND CM500	(MIDI)	£770
DR 550 MK-II		£270
DR 660		£399

Master Keyboards

ROLAND PC200-11	£220
ROLAND PC150	£130
Studio 49 4 Octave	£119
Studio 61 5 Octave	£199
Studio 90 7 Octave	£599

Sound Cards

Soundblaster 16 ASP	£259
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ProAudio Spectrum 16	£205
Gravis UltraSound	£175
Orchid Sound Producer	£80
Orchid Sound Producer Pro	£185
MIDI Kit ProAudio & Gravis	£35
MIDI Kit S/B & Orchid	£20
ROLAND SCC-1	£315

Kit **SEQWIN + MM401 MIDI INTERFACE + CABLES** **£135**

Kit **QUICK SCORE DELUXE, PC MIDI CARD + CABLES** **£199**

Kit **CAKEWALK MIDI STARTER KIT** **£169**

Sequencers & Notation Software

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Cubase	(WIN)	£299
Trax	(WIN)	£89
Master Tracks Pro	(WIN)	£379
Cadenza	(DOS)	£175
CakeWalk Pro	(DOS)	£185
EZ Midi Pro	(DOS)	£120
Prism	(DOS)	£67
Encore	(WIN)	£420
Music Prose	(WIN)	£220
Finale	(WIN)	£799
QuickScore Deluxe	(DOS)	£115
Laser Music Processor	(DOS)	£TBA
SongWriter V	(DOS)	£115
Musicator GS	(WIN)	£275
The Musicator	(DOS)	£549
Musicator GS	(DOS)	£270

Label ability

Sometimes a white label release is just not enough when you're serious about music. David Robinson says think bigger and set up an independent record label.

You've got a tape full of killer tracks. You love them, your mates love them, everyone loves them. Everyone, that is, apart from the record companies that you phone and harangue every week. They just don't want to sign you up, and there just seems to be no way of convincing them otherwise.

People in this situation often take the chance of releasing their own white-label recordings – that is, 12-inch promotional singles with the very minimum of packaging – putting them out to the shops and hoping that something good comes of it. Mark Richardson, owner of Newcastle's Hypa Records, is highly sceptical of this one-off extravagance. He says: "People who cut one track for a white label are not going to make much money at all, apart from covering initial costs. I know this from 10 years in the business. If you're lucky, you might make enough to fund a few records, hoping you'll get picked up by an independent label. But the problem is, there is a recession and there isn't the money going around for big advances. It's no good releasing tracks just when you feel like it; you've got to run things more like a business."

This is exactly what Mark does. He started Hypa the label that recently signed Interlect 3000 – one of the bands featured on *FM* 4's cover CD – just over four years ago, having started out with a music production company back in 1983 with help from the Enterprise Allowance Scheme.

So what are the advantages in actually setting yourself up as a company? The answer is mainly clout. "You get taken more seriously as a label," says Mark. "You've got credibility and weight behind anything you release. And, of course, you can sign other people up too."

The first thing you need is something to release. "It's imperative that any independent label has full access to a studio," emphasises Mark. "You must put the money you make back into the business and the studio. It's expensive using other people's, and you won't get much 'product' recorded if you don't have studio access.'

Then you have to clear, arguably, the biggest hurdle. It's all a question of will-power. "The most important thing is to say, 'Yes, I'm going to do it!'" says Mark. "Gather a few friends, and family if possible, sit down and decide what you're going to do."

Lend us a tenner

Next you have to get some money to fund your venture. Costs for manufacturing, artwork, distribution and so on can soon mount up: just producing 1,000 white labels will cost you around £1,000.

Raising money presents problems analogous to getting your demo accepted by a record company, as Mark explains:

"Banks don't want to know about entrepreneurs in the music business. They forget that the industry makes billions, not millions, in this country.

"I went to every bank when I was starting out and got turned down. Unless you've got good access to your bank, unless you've got some good credit with them already, you can forget it. It's no good going in and saying 'Please will you lend me £1,000 to press up a record?'. Basically you've got to say something like 'Please will you lend me £1,000 to buy a car?', then you go and press your record."

This may sound dodgy, but it's not as long as you meet the repayment requirements. A spokesman for a major high street bank told us: "If the money is not used for the stated purpose, like a car or home improvements, it's not technically illegal. However, if there are subsequent problems with repayments, and it is discovered that the money was misused, the misuse will be taken into account in any prosecution." You have been warned!

"You might even have to sell something to get started, but if you believe in what you're doing, then it's worth it," Mark adds.

On your way

Setting up as a company couldn't be easier. Just think of a name, and let Gallup know about it.

"We operate the Records Labels Register, the RLR," says Gallup product research manager Philippa Hayes. "This is a means of checking that the label name you want to use isn't being used by anyone else, then registering that name.

"There's an initial, one-off charge of £30 for this, but after that, if you want to register anything else, like a record release for instance, there's no charge."

Then you have to set things up with those nice people at the Inland Revenue. Tom Doherty, chairman of Communique records – a label set up about three years ago and which now boasts such signings as Girlschool, Samson and Gryphon (remember them?) – explains: "Just like any new business, you have to talk to the tax-man. You have to be VAT registered, depending on your turnover. If you can't manage your own books, you have to bring in somebody else, may be just on a part time basis. You have bought ledgers, sales ledgers and VAT concerns like everyone other company.

"Even if you're on a tight budget, you can keep record of expenditure and income. Then you could bring in an accountant every six months to just check over the books. And as a new business, there shouldn't be much work to do anyway."

Always try to find an accountant who's dealt with the music biz before: this way he or she will be sympathetic to your concerns. The same applies to another important person you'll need: a solicitor.

"A solicitor is a must," agrees Mark. "Make sure you pick one who understands the music business, who understands you're a new label. They should reflect that in your account with them: they'll give you a certain amount of time for nothing, and build up the bill as the company gets bigger." Ask for proof of other music business clients they represent, and ask to see some specimen contracts they've put together. Sort out hourly charges and administration costs at the outset so there are no nasty surprises later on.

"Beware of those who want to talk money straight away. That goes for the accountants too," says Mark.

The rest of the team can be put together from your circle of friends. "Keep the team as small as possible," advises Tom. "In that way you can take care of every concern; and the beauty of a small company is that you soon learn to deal with all the aspects of the business."

Useful contacts

Article Number Association (UK) Ltd, 11 Kingsway, London WC2B 6AR
Tel: 071 836 3398

British Phonographic Institute, Roxburghe House, 273-287 Regent St, London W1R 7PB
Tel: 071 629 8642

Gallup, Gallup House, 307 Finchley Road, London NW3 6EH
Tel: 071 794 0461

Mechanical Copyright Protection Society, Elgar House, 41 Streatham High Road, London SW16 1ER

Performing Right Society, 29-33 Berners Street, London W1P 4AA. Tel: 071 580 5544

Phonographic Performance Limited, Ganton House, 14-22 Ganton Street, London W1V 1LB
Tel: 071 437 0311

Don't forget that your success is in the interests of all these bodies, so make contact with them as early as possible when you go about setting up your label.

They are usually very obliging, and will send you information about the services they provide and how you

doing everything: accountant, A&R man, manager, and I'm an artist as well. At Hypa we have an A&R man who makes cups of tea as well as and sitting in on recording sessions. Another guy does A&R, but also goes and buys *Music Week* to see if we've charted. Within ten minutes of getting back, he could be engineering a record."

A&R — artiste and repertoire — people are very important to any label. Some are reputed to earn astronomical salaries for being able to spot an act that is going to earn a record company wheelbarrow-loads of cash. In your case, wages are going to be on more of a garden-trowel kind of scale. Incidentally, A&R covers more than just talent-spotting: it means fixing recording sessions, looking after master tapes, liaising with producers and engineers – basically ensuring that a band is happy on your label.

In the careers section of *FM* 1 ('Dress to Impress') we looked at what top A&R people look for. Tom offers one piece of advice when you're seeking bands to sign to your shiny new label: "Initially, aim for acts that can play live, because that helps immensely: they can tour, they're more visual, so they can be promoted more easily."

Your new band will want to see, and hopefully sign, a contract. Finalities should be settled in the presence of a solicitor, who will need to check legal terms and see that everything is properly signed. However, you can save consultation costs by preparing a contract beforehand — there's a useful sample contract in Unyque Artist's *The Book* – see separate panel.

Final vinyl

There's someone else you have to talk to before you go any further: the MCPS.

The Mechanical Copyright Protection Society is responsible for collecting royalties for artists and music publishers. It also issues 'licences to manufacture', and many pressing plants won't manufacture your product unless you've got such a licence.

Apply to the MCPS, and they'll send you an 'Application For Licence' (an AFL). Fill this in and return it; the MCPS will then tell you if there are any royalties due. If the material is all your own, then you should have no-one to pay but yourself, and costs will be negligible. But if it's a cover version, or there's a great chunk of somebody else's track in there (yep, it's that old sampling bugbear again), then you will have to settle up before you can have the all-important licence.

So now you've got your product on DAT, you've got your licence and you're set to make some copies of your work.

The next stage is a major process in itself. In *FM* 1 and *FM* 5 we talked about cassette and CD mastering and duplication – see our back issue service on page 52 if you missed this. But most labels, especially if they are producing dance music, will want a 12-inch piece of vinyl to put about to as many places as possible. The intricacies of 'The Cut' and 'The Pressing' will be covered in a

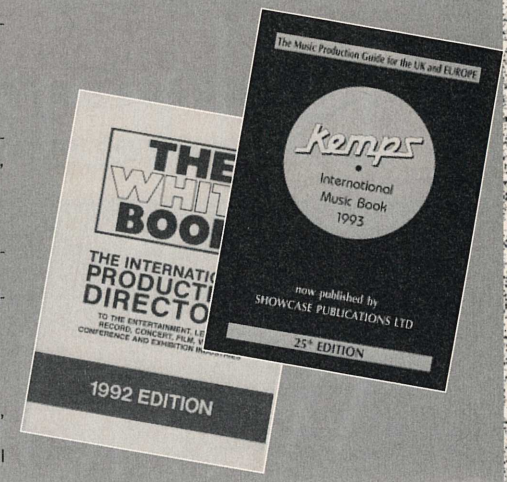
Useful books

Kemps International Music Book 1993 (ISBN 0 9516212 3 8) £28
Published by Showcase Publications Ltd, 12 Felix Avenue, London N8 9TL.
Tel: 081 348 2332

Music Week Directory (ISSN 0 2673290) £32
Published by (and cheques payable to) Spotlight Publications; available from120-126 Lavender Avenue, Litcham, Surrey CR4 3HP
Tel: 081 646 1031

The White Book: The International Production Directory (ISBN 0 947569 11 1) £40 inc p&p
Available from Birdhurst Ltd, PO Box 55, Staines, Middlesex TW18 4UG.
Tel: 0784 464441

The Book: Volume 1 (The Music Industry) £10
Published by Unyque Artists/Intrigue, PO Box 1257, London E5 0UD
A bit slim and amateurish (only about 35 useful pages), but does include plenty of tips, a step-by-step guide to releasing a record, specimen contracts plus a huge DJ and record shop contact directory.



It's sufficient to be aware for the moment that you must first take your DAT to a cutting room; the cutter then gives you a fragile lacquer which goes to the pressing plant; and from this plant you get your record.

Now it's time to get in touch with Gallup again. Says Philippa: "Gallup checks and registers catalogue numbers you want to use for your record, again to ensure there's no duplication. The register has no legal weight, but it's been running for over ten years now, and it's just something most people tend to use.

"If people want to get into the charts, they should inform of us of any records they are releasing. But some people don't register, and this doesn't necessarily stop you getting into the charts: if your record is selling well enough we'll get to hear about it.

"Generally, though, people are at a disadvantage if they don't have a bar-code: for example, shops like Woolworths record sales using scanners and bar-codes."

To get a bar-code, you must contact the Article Number Association. John Pearce, ANA information executive, tells us how the body works: "We issue you with a unique 13-digit number to code your product with. The first seven numbers are your company identity; then you allocate the next four numbers yourself, a different number for each of your products. The last number, the 13th, is a check digit.

"We always tell people to get in touch with the BPI, because the 12th digit is a set number, depending on the format (CD, tape or whatever), and they can tell you all about that. When you join the ANA, we send you an application form which you fill in and we process. We then send you a letter of confirmation that you are now a member and what your number is, plus some general information of how bar-coding works.

Bar-code artwork, called a film master, is done by a film master supplier, a kind of printer. We send you info about the 13 suppliers around the country too.

"Membership fees depend on turn-over. For a new company this will be the lowest fee, two payments of £60: a one-off payment, plus an annual subscription."

Now you're ready to get the artwork together, promote your record like it was God's gift to the ears, and get it distributed to every outlet possible.

So next month we'll take a good gander at plugging, promotion, advertising and securing commercial distribution for your recordings. See you then. **FM**

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*SMPTE/MTC/MIDI Interface 1in/2out.....**£233***

☐ ***CMS 444C***
*SMPTE/MTC/MIDI Interface 4 in/4 out.....**£292***

☐ ***Key Mediator MS101***
*Serial Port Interface for laptops 1 in/1out **£116***

☐ ***Key Mediator MS124***
*Serial Port Interface for laptops 1 in/4out **£151***

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*1 in/1 out (MPU401 compat)....**£79***

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Top pedigree rack

The new Kurzweil K2000R synth goes a lot deeper than just providing sounds. Richard Riley gets deeper down...

KURZWEIL BEGAN ITS CAREER producing modules containing the definitive piano sound for artists who wanted to take their Steinway on the road but didn't want to pay the shipping charges. The name was seen on some very expensive boxes and Kurzweil's high-end reputation began. Since then Kurzweil has had its ups and downs, but has now come back with the new K2000 keyboard synth and module. The rackmount version under review here has a number of features which were not included on the keyboard model, such as the integral fan and additional audio outs. There are also SCSI ports included for connection to your hard disk, plus an improved version of the software.

On paper, the K2000R certainly looks powerful and flexible enough to deliver the goods in any situation, with 8Mb internal ROM storage space, 24-note polyphony, 200 built-in sounds, 100 performance set-ups and a floppy disk drive as just some of the features. It also has the capability to talk to pretty much any sampler in the world, has SCSI ports for attaching external hard disk drives, 96 (yes, 96) oscillators, built-in digital signal processors (DSPs), a Macro function, an amazing selection of upgrade options... the list just goes on and on.

So much for theory, but the question is, how good is the machine in practice?

The K2000R's external structure is solid and business-like, fitting into a tough 19-inch rack-mounting unit. If you don't plan on using it in a rack, then you'll need to put it somewhere it can breathe – all that computing power takes energy, which creates heat, which needs cooling down. There have been some complaints that the rear cooling fan is noisy, but the one on the review model makes no more noise than the fan on your average PC.

The front panel is flush and dominated by a blue, backlit LCD, which provides communication between you and the machine, and a set of 16 buttons under the display, which offer all the usual editing and control features. As tempting as it may be to jump in with both feet and start playing, it's definitely worth reading the well-produced manual before you start – otherwise you'll very probably never find out just what it's capable of. On the most basic level, the manual tells you how combinations of buttons call up various functions. For instance, with all those sounds inside, tooling up and down for your favourite can be a real pain. No problem, says Kurzweil, and happily produces a database function which searches through its files for any given string of characters. Very neat.

The business end of the K2000R is in the sounds it produces and there are no disappointments here. It's got the lot, from sharp chuffy washes and pipes to rich analog pads. Terrific deep Moog basses sit next to breathy Enigma flutes and '70s Fusion. It has a brilliant seashore patch and will even do a world (if you ask it nicely). Four drum sets are programmed – this may not seem a lot if you are using the K2000R on its own but the sounds are there and they are great. Try rolls and paradiddles on your TG77 or M1 and see how the sample cuts off with each stroke. On the K2000R each note has a life of its own – it's simply a musical instrument. In effect the K2000R is capable of doing pretty much anything you like.

VAST choices

The secret of the K2000R lies in the internal VAST (Variable Architecture Synthesis Technology) structure. Most other synth structures offer a fixed set of tools to create a sound, whereas VAST gives the user much more flexibility. Up to five DSP tools can be arranged in any combination from a long list of possible choices, each combination forming an algorithm. Thirty-one choices of algorithm can be combined to form the overall sound architecture of the K2000R. All this provides the freedom to be creative with programming and gives the K2000R its unrivalled range of sounds. And when you've created your killer sound, there's still the fully-specified digital multi-effects processor to further enhance your creations.

The current buzz-phrase in computing circles is 'object-orientated'. This term is used to define a program or utility which, rather than thing on its own, is made up of lots of little programs all linked to each other. This is the basis of the K2000R internal architecture. Eleven different objects are employed to create each program sound; they are independent from one another, can be used in other sounds as well, and are treated as articles in their own right by the Kurzweil's internal memory. All this means that actually using it is simplicity itself. Even the MIDI specifications are enormous. Whatever MIDI operation you want to carry out, the Kurzweil K2000R will more than likely let you do it.

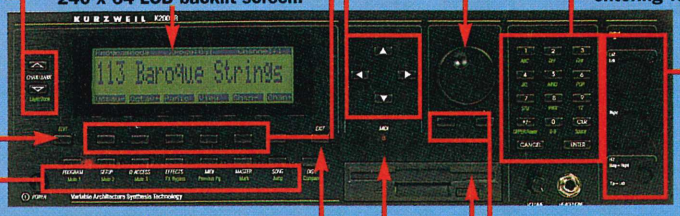
It's because of its musical capability, rather, than its ability as a mere sound source that score-writers have taken to the K2000R like... well, like score-writers who know a good thing when they hear it. Those terribly nice people at Kurzweil have equipped the K2000R with a large range of orchestral and classical sounds. There is a growing movement of 20th-century composers who see electronic instruments such as the K2000R as a valid composing ▶▶

New sounds for old

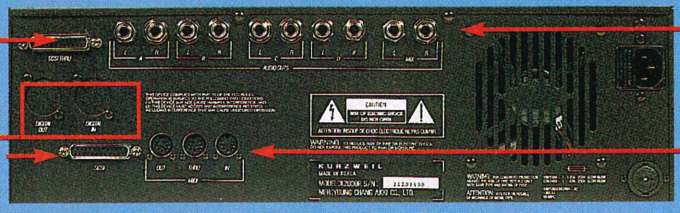
As well as the amazing range of over 200 internal sounds, the K2000R can be equipped as a sampler. As a read-only device it can read samples from disks supplied by Kurzweil or disks for the Akai S1000. To do this you must provide the K2000R with more memory using Macintosh-style SIMMs (Single In-line Memory Modules) which plug straight into the internal K2000R board. The K2000R will take SIMMs from 1Mb to 16Mb, though no minimum requirement is specified. Kurzweil is also planning to release a new version of the operating system, which will read a larger range of disks including S900 and Ensoniq EPS16 – but be prepared to dig deeper for more SIMMs.

To actually sample with the K2000R you must retro-fit the additional Sampler Module. This hasn't arrived in the UK yet, but we'll bring you more news as it arrives. The Sampler will be able to accept analogue (balanced or unbalanced) or digital inputs from a wide variety of sources. As if all this wasn't enough, the dual SCSI ports enable a string of K2000Rs to be 'daisy-chained' to a hard disk drive.

A lot of front


Used for scrolling in certain Modes.
'Soft' function buttons – functions depend on current Mode.
240 x 64 LCD backlit screen.
Cursor buttons – move around current page.
Alpha wheel – for altering data values.
Alphanumeric pad for entering values or names.
Activates Edit function in current Mode.
Inputs for sampling option (when fitted).
Mode selection buttons with LEDs.
Exit from current Editor.
Lights when MIDI message received.
Disk drive.
Increment or decrement parameter by one.

Good connections



tool, so it probably won't be too long before the machine starts popping up on the soundtrack of your Friday night vid.

So how does it work in a songwriting environment? Playing in the parts from a keyboard is easy, as is creating the MIDI maps to assign sounds and channels – though MIDI maps do have to be saved to disk. Choosing MIDI sounds is easy using the Quick Access function. If you choose Finger Bass, but find it too dull for your powerful funk track, a push of a button will produce a screen display of all the other basses available, regardless of program number.

When you're playing in drum tracks, the natural sound and playability of the individual parts is rather impressive. The West Room Kit in particular has great ambience (not to mention a kicking snare-bass combo). Using these instruments it's very easy to get a convincing drum track down in a surprisingly short space of time. Moving on through basses, organs and so on (Ballad Organ is rich and clean with Warm Bass being deep and woody), the K2000R offers a large choice of instruments and is unlikely to leave you wishing for more sounds.

For the more classically minded, Touch Orchestras uses layering to produce timps and cymbals depending on key velocity, while Grand Strings creates a feeling of warmth and richness. Stick in Clock Bells and Glockenspiel for light passages and you're away! If you can't afford Nigel Kennedy to perform your work, a little tweaking of the K2000R will produce an orchestra which, while perhaps not truly accurate, will certainly fit the bill well enough.

Luxury at a price

The K2000R has four monophonic (rather than stereo) global effects, and when these are used multi-timbrally, the effect must be chosen to suit the overall sounds coming from the unit. This means that it's not possible to have a lengthy delay on the Strings while using short reverb on the Drums. This isn't really a drawback, and to be fair the K2000R isn't designed as a General MIDI unit. Its multi-timbral mode is best used when layering sounds of the same nature. Of course, the K2000R will produce all the stereo effects you want – 109 of them in all, ranging from Graphic EQ to Reverse Reverb and all stations in between.

However, all this luxury comes at a price. With a retail tag of £2,769 the K2000R is out of the reach of all but the most affluent of musicians. Even solid professional touring artists would think twice about a price tag of nearly three grand – and that's without the hard drive or sampling options. So the K2000R really has to convince potential users that it's worth all that money. Bearing in mind the weakness of the pound and the high risk involved when buying any piece of new technology, you might decide to simply opt for what you already know and pocket the change.

However, it's a pretty safe bet that if you opt for this it will stand you in good stead. To begin with, the K2000R is going to sell on the quality of sounds alone. Then, as you expand, the device will expand with you. If you want it to be a sampler or another synth, then it can deliver. On the other hand, if you covet your neighbour's sample library, go ahead and take what you want – the K2000R will cope with most formats. This one box will emulate virtually any synth or sampler on the market and could save you money by giving you what you want instead of what it thinks you should have. It's a select club and membership might seem expensive, but the rewards are there too. After all, there is always room at the top. FM

Kurzweil K2000R

MIDI synth module

£2,769 ◆ The Washburn Group of Companies, 15 Amor Way Letchworth, Hertfordshire SG6 1UG ◆ Tel: 0462 482466

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Verdict

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Ease of Use / Setting up

Quality of results

Value for money

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Technical specifications

The specification of the Kurzweil K2000R reads more like a wish list:

Display:	240 x 64 pixel backlit LCD
Disk:	3.5 inch floppy drive (DOS compatible), optional internal hard disk
MIDI:	In, Thru and Out (with MIDI message lamp)
Polyphony:	24-note
Pre-sets:	199 sounds, 100 setups
Sequencer:	15,000-note scratchpad (loads MIDI Format 0 sequences)
ROM:	8Mb (samples)
Bandwidth:	20 Hz – 20 KHz
Ports:	10 quarter-inch audio outputs, stereo headphone jack, two SCSI ports
Algorithms:	31 programmable DSP algorithms, up to three per voice
Effects:	Programmable stereo multi effects on mix outputs
Storage:	128k battery-backed-up RAM for user programs and setups
Size:	19-inch rack format. 4 units high, 354 mm deep
Compatibility:	Stereo sample playback capability, (with optional SIMMs) Akai S1000 compatibility

Alternatively...

Real alternatives are rather thin on the ground – Kurzweil is pretty much out on its own with the K2000R, but if this is a little rich for your taste (and you wouldn't be entirely alone here) there are a couple of options you may want to consider.

If you need a world-class sampler you might check out the E-mu EIIIxp, and then of course there is the whole of the new Akai range to consider, including the S3000, soon to be a classic (see review in *FM* 5). For the synth parts, try the Yamaha SY99, which has a neat 76-note keyboard and can handle FM synthesis (which the Kurzweil can't). On the other hand, the Yamaha can read its own sample library but can't sample itself, which the Kurzweil can.

E-mu EIIIxp £2,999 ◆ E-mu Systems, Tel: 031 653 6556

Akai S3000 £2,999 ◆ Akai Professional, Tel: 081 897 6388

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RGB Monitor (Philips CM8833 MkII)	£249

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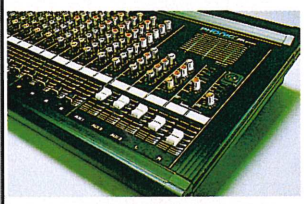

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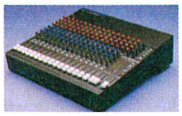
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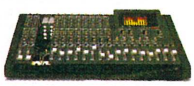
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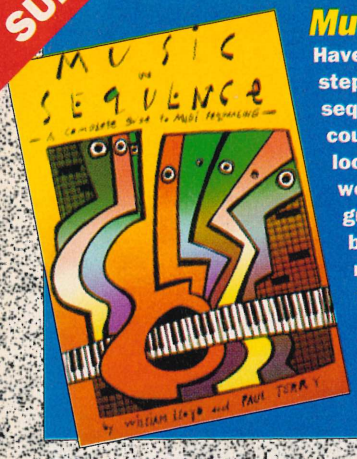

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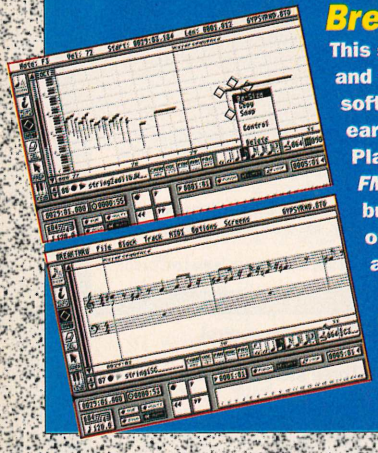

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Getting tooled up with MIDI

MIDI is so versatile that it has been integrated into a diverse range of equipment. Tim Tucker looks at the equipment that can use MIDI, and what it helps you do.

◆ **A graphic equaliser with MIDI enables you to control EQ settings from your sequencer.**

So far in this series of articles we've looked at how MIDI works, some of its message types, and how it can be used effectively. But what kind of equipment sends and responds to these messages, and in what way do they respond? You're probably familiar with the more obvious MIDI instruments (keyboards, synths, samplers and sequencers), but there is a lot of hardware that benefits from MIDI in less obvious ways. So let's take a look at what's out there that's MIDI-equipped.

Keyboards aren't the only things that can play MIDI equipment. Drum pads can be used to trigger percussive sounds, special effects and even musical instruments. They work by simply sending MIDI note messages of a certain pitch when each pad is struck, but they can also provide many other useful features. Some enable you to assign more than one pitch to a pad, and use velocity to determine which pitch is sent out. Thus hitting the pad hard would trigger a loud snare crack sample assigned to pitch C5 in your sampler, whereas hitting it softly would produce a sample of a quiet snare hit assigned to C4. You could even trigger three pitches at the same time, which, when sent to a piano or other pitched instrument sound, enables you to play chords by hitting a MIDI drum pad – it's very spooky.

"You can trigger chords by hitting a MIDI drum pad – it's very spooky."

Guitarists and bass players can also benefit from MIDI. One type of MIDI guitar controller uses what's known as a pitch-to-MIDI converter. This does exactly what it says – takes audio sounds, analyses the pitch and converts it into a corresponding MIDI note message. This could also be used with vocals, wind instruments or anything that produces a pitch, meaning you could record all your sequences with a kazoo if you were so inclined. The disadvantage of this system is that it takes a certain amount of time for the converter to analyse the pitch and produce a MIDI message, which often

MIDI utilities

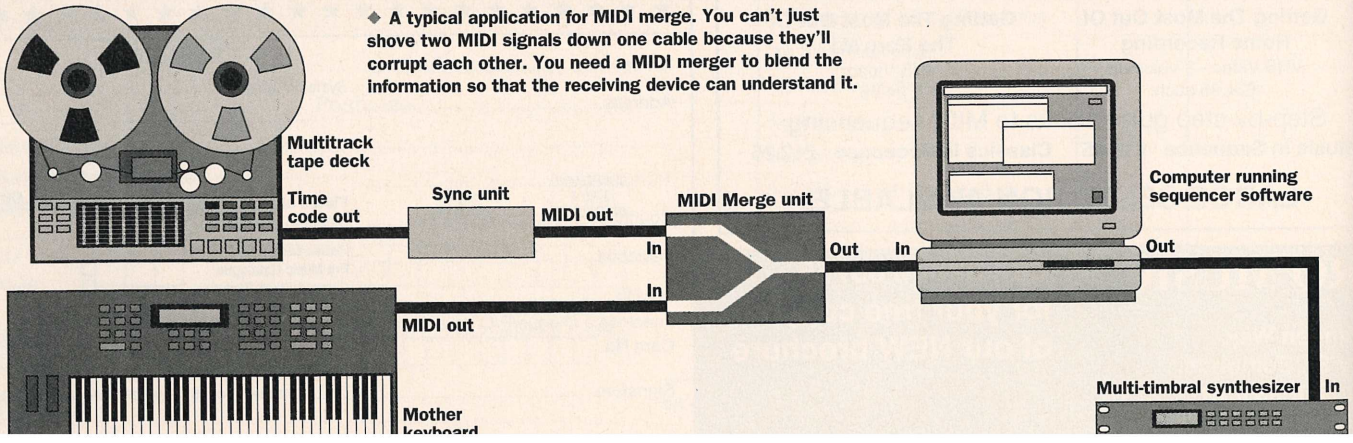
Every MIDI system is different and, despite its flexibility, there are often problems or things that need ironing out. Help can usually be found from a number of different MIDI utilities.

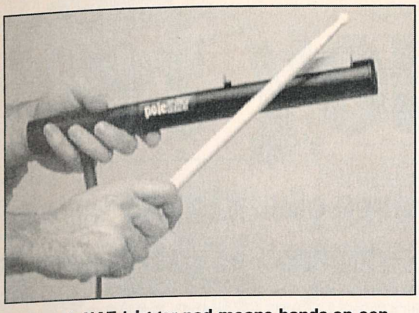
One common problem is if you need to feed more than one instrument into a synth. Say you were on stage and you wanted to have a multi-timbral synth playing some sequenced parts, while you play another of its sounds from a keyboard and the drummer triggers some percussion sounds using drum pads. But there's only one MIDI In port. The solution is to use a MIDI merge unit, which takes a number of MIDI inputs from various sources, mixes them all together and sends them all out of one output.

Sometimes you might need to filter out messages of a certain type. For instance, you might have a sequencer connected to a number of synths, one of which only receives in Omni mode, meaning it will try to play all the MIDI channels that are being sent out to other instruments. There are MIDI filter units available which you can set to only allow certain information through. In our example, you would connect it before the instrument receiving in Omni mode and set it to only pass information on MIDI channel 5, say. This is effectively the same as setting the synth to channel 5, and means that you can record all the parts for that synth on that channel.

Big systems often get complicated, and at times it can be a real pain when you need to reconnect the MIDI set-up in a different way for some reason. A MIDI patchbay can help you enormously here. It consists of a row of MIDI Ins and a corresponding number of MIDI Outs. The patchbay enables you to connect any In port to any other Out, either by using patch leads or built-in software in the unit. The more sophisticated patchbays can incorporate merging and filtering features too.

◆ **A typical application for MIDI merge. You can't just shove two MIDI signals down one cable because they'll corrupt each other. You need a MIDI merger to blend the information so that the receiving device can understand it.**





◆ A poleKAT trigger pad means hands-on control for MIDI-inclined percussionists.

leads to noticeable delays between playing the note on the guitar and hearing the sound from the synth.

A better system is one that uses sensors on the guitar itself to detect which notes the guitar is playing and convert them into MIDI messages from there. The most accurate method is to build sensors into every fret on the guitar, which then operates much like a MIDI keyboard – when you press your finger on a fret, the MIDI note is sent out. You could play this guitar with your left hand only, simply fingering the notes on the fretboard, but more sophisticated systems convert the pluckings of your right hand into velocity messages, giving you control over the volume of the note as well. Guitarists can also benefit from the implementation of MIDI on their amps. MIDI-equipped amps respond to Program Change messages, recalling all the EQ, volume and tone settings for a particular song straight from the sequencer, leaving you to try and remember the chords.

> *"There's even a MIDI pedal steel guitar for New Age country music"*

Anything goes

Nowadays, any instrumentalist can get armed with MIDI. Wind instruments, most commonly saxophones, use the keys on the instrument to produce the note message and can also include breath sensors to determine velocity levels and pressure pads in the mouthpiece to transmit pitch bend.

Custom instruments have been built to enable violinists, cellists and other stringed instruments to use MIDI (the Reggae Philharmonic Orchestra are one of the bands who have used these), and there's even a MIDI pedal steel guitar for anyone who's interested in making New Age country music.

One of the most essential pieces of kit, whether you're in the studio or on the road, is an effects processor. These can add reverb, delay and other special effects to your sound or even clean up noisy audio channels, and most effects units now come with MIDI control on board. They can respond to Program Change messages to bring up a preset effect, which saves a lot of time mucking about trying to find the effect you used on a particular sound or vocal. More sophisticated models respond to other MIDI messages – for instance, the amount of chorus might be increased when sending Control Change messages of a certain type.

Interesting effects can be achieved with some ingenuity – for example, setting the depth of reverb to increase when sending

that, say, a piano sound would not only get louder when you hit it harder but more spacious too. The potential is vast, especially with multi-effects units incorporating a range of different effects types into one unit.

MIDI noise gates are also very useful pieces of equipment. Whereas a normal audio gate opens when it receives a signal above a predetermined audio level, a MIDI-equipped one will open when it receives the MIDI message that also triggers the sound, thus ensuring the timing is spot on.

MIDI mixing desks benefit from the large amount of control data that MIDI can cope with using Control Change messages. Some respond to corresponding control messages, enabling you to adjust fader movements with Control Change number 7 (Volume), panning with Control Change number 10 (Pan) and so on. You can even assign unused Control Change numbers to control EQ settings, or any other controls on the mixer. This amounts to automated mixing, leaving you to concentrate on your music.

Some MIDI-equipped mixers don't give you as much control, but enable you to send Program Change messages to bring up 'snapshots' of the mixer – that is, the position of all the controls at a given time. This is obviously less flexible, as it only allows for sudden jumps of control positions, and not smooth movements like you get with Control Change messages. It's still handy just for switching channel mutes on and off, which means you can automatically cut mixing desk channels that are not being used at a particular time and so reduce noise in the recording.

Even lighting rigs can be controlled by MIDI. These usually rely on Program Change messages to bring up a set position of the lights, and some use Control Change messages to perform smooth movements. The results can be astounding because you can have each element of your lighting system changing in sync with your music.

Data recorders

If you want to use sequencing in your live set-up, there is an alternative to dragging your sequencer on the road with you. Computer-based sequencers are not very reliable on stage because they have a tendency to crash with all that electricity running about, and it's obviously expensive to fork out for a hardware sequencer just for live work. The other possibility is a MIDI data disk recorder, which (as you might imagine) is a hardware unit which simply records

◆ With the Yamaha MDF2 data filer, you can store any complex MIDI messages on a computer floppy disk.

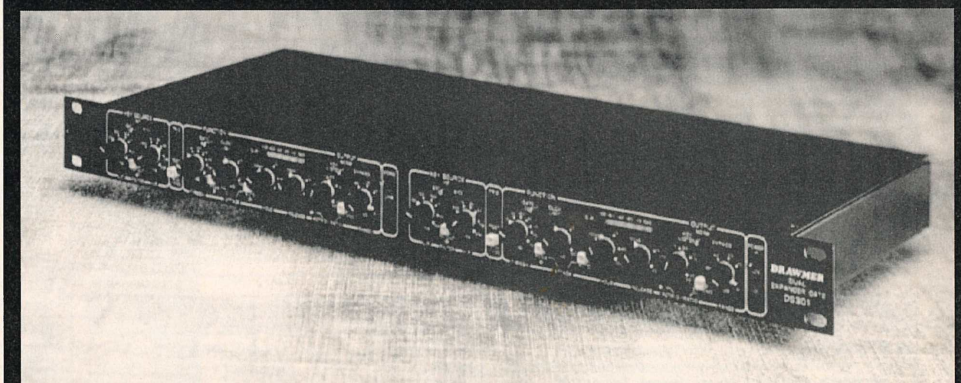
whatever MIDI information is sent to it direct to floppy disk. Before you set off for your gig you could record all the sequences you want in the data recorder and play them back on stage. It's more reliable, cheaper and a lot easier to use than a hardware sequencer, but you can't edit or manipulate the information you record with it – it simply records and plays back.

You could also use it to record system exclusive dumps from your equipment. This could include patch information, enabling you to save edited patches when you've run out of internal memory on the synths themselves, and you can even save samples using MIDI sample dumps. It enables you to save the state of your entire MIDI system (synths, samplers, MIDI effects units and mixing desk) to the data disk recorder. This could save you tons of time to set the whole lot up again the next morning.

As you can see, there is more to MIDI than just playing and recording notes. As MIDI itself expands, so does its potential for use in a variety of different pieces of musical and production equipment. The ingenuity of manufacturers to implement MIDI in so many different ways is possible because of its sheer flexibility. **FM**

Gate ways

A noise gate is a piece of equipment that only lets sound through when its 'gate' is open. It's usually used to keep channels quiet on a mixer when no sound is going through them, but with MIDI control it can be used to create some interesting effects. A good example is where a keyboard or guitar plays a long sustained sound, and the gate is triggered via MIDI messages in eighth or sixteenth notes (you could route the hi-hat part from your sequencer to do this). The result is a rhythmic stuttering effect, which can be heard on quite a few Shamen tracks, to name but one – check out *Progen (Move Any Mountain)* for an example of the effect. This technique can also be very effective with vocals.



◆ A MIDI expander/gate, like the Drawmer DS301, is more than just a way of cleaning up your sound. A noise

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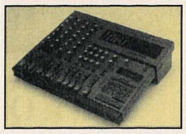

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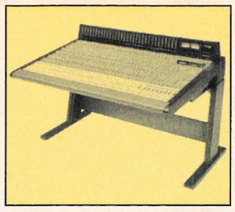

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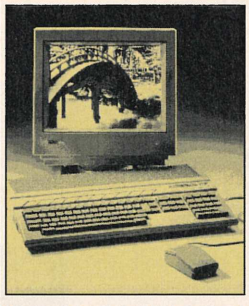

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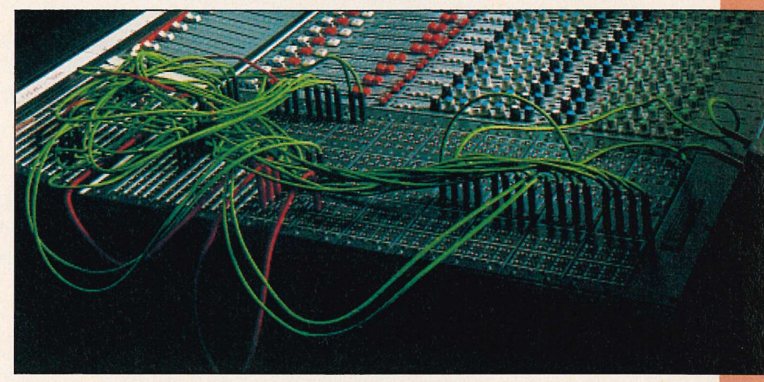
Get yourself connected

All your bits of studio equipment are no use until they're connected together. Karl Foster and Tim Tucker unravel the complexities of getting plugged in.



◆ **Taming the jungle of leads in your studio helps you work safely and quickly, and avoid the dangers of unwanted noise during recording.**

Before you get your home studio up and running, you're going to have to face the inevitable – plugging it all in. That's not just a case of shoving sockets into the wall, there's all those audio and MIDI connections to be made between instruments, multi-track, effects units and mixer. It's important to get things right from the start, and this month we're delving into the forest of cables to look at ways of improving your studio environment.

Lead the way

Good quality audio leads and connectors will help avoid introducing noise into your recordings. Duff leads create crackle, either because the wires inside are shot or the solder joints are failing where wire meets plug. The resulting friction, as metal grates against metal, causes session-wrecking crackle. Also, keep the metal of the plugs and sockets clean with zero-residue contact cleaner (see your local hi-fi dealer). Dirt causes crackle too.

Use shielded cables for anything carrying an audio signal to the amplifier – that's on all sound sources, on the mixer, on any signal processors, the works. The reason is that an unsheilded cable acts as in the same way as a TV aerial and will pick up unwelcome transmissions such as obscure radio stations, interference from electrical gear, and sad types with interplanetary-scale CB rigs.

The interference may not be very powerful, but audio signals are very low power and, when amplified, you'll have your guitar solo coming out at the same volume as the idiot calling "Alpha Centauri, one-four for a copy". In the same way that lightning travels round the skin of an aircraft, leaving the passengers within happily un-frazzled, so a shielded cable fends off interference. It has a wire down the core and a metal shield that surrounds the core which completes the circuit and acts as a defensive shell.

"Those knots that require five years' training in the Boy Scouts to unravel."

The same does not apply to speaker cables because the signal they're carrying to the speakers has already been amplified and so is pretty invulnerable, so a two-strand unshielded cable will do.

Home studios commonly use single strand cables with a shield, as described, but whereas the shield gets rid of most of the interference, it's still subject to mains hum. This is because the shield is used as part of the electrical circuit and, along with the conductor strand, forms an earth loop. To prevent it, you have to ensure that only one piece of equipment is connected to earth. Be warned though, this can be dangerous. If you unplug the audio connection (depriving one of the pieces of equipment of an earth connection) and there's a fault, you could get a serious electric shock. The kind of system described here is known as an unbalanced system. More professional equipment uses balanced connections, which solve the problem of mains hum without the need to muck around with earth connections.

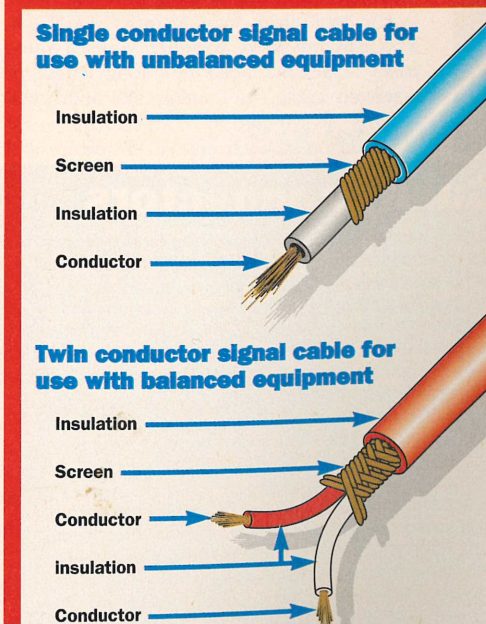
Balanced equipment uses two conductors to carry the signal, and a shield. The system is called 'balanced' because each conductor sends an equal signal of opposite polarity to the other, creating a balance. At the other end of the cable, the equipment (say a mixer) calculates the 'difference' between the two conductors and takes the resulting signal. Because any interference will affect both conductors equally, it is and although not all interference can be eradicated, the large proportion of it is. The equipment also ignores the shield, so there's no earth loop either. And remember, it's not the cables which are balanced but the equipment itself.

The two conductor cables described are necessary for use with this equipment, but they can also be used with unbalanced equipment. Difficulties arise when you want to connect unbalanced equipment to balanced, or vice versa. In these situations consult your manuals and, if necessary, call the manufacturer of the equipment for advice.

One of the problems that crops up with cables, regardless of their audio performance, is the simple matter of the muddle they create. Just like anything else in a ▷▷

Balancing facts

Professional studio equipment uses balanced connections with two signal conductors plus a screen. Interference picked up in the cable should effect both conductors equally and cancel itself out. The shield is ignored by the equipment so earth hum is avoided. Unbalanced connections use the shield as part of the circuit and you have to take more care to avoid an earth loop.

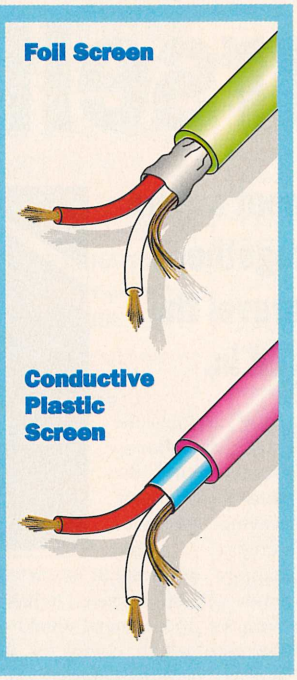


Screen test

There is more than one method of screening a cable to avoid interference. The most common is called a lapped screen, and consists of about 60 strands of copper wire wrapped around the conductors. More protection is provided by a braided screen, which has the strands woven together, a foil screen twin (or FST) which uses aluminium foil instead of copper, and a conductive plastic screen.

The disadvantages of the more protective screens are that they can be harder to attach connectors to if you're doing your own soldering, and, in the case of the FST, are less flexible, often causing kinks in the lead.

Another specification worth looking at in a cable is its capacitance. This is a measure of how much of the signal leaks through to the screen from the conductors. The leakage results in a loss of high frequency, creating a dull sound, and the longer the cable, the more pronounced the effect. Capacitance is measured by picofarads (pF), and a typical specification would be about 200pF per metre.



confined space, cables follow that well known rule of Mr Isaac Newton – they tend towards chaos. Obviously, the thicker the cable, the less likely it is to get tangled around itself and form one of those knots that requires five years' training in the Boy Scouts to unravel – a diameter of about 7mm gives the ideal balance between flexibility and knottiness.

When running leads across your home studio floor, use gaffa tape to secure them to the floor. This way, you won't find yourself flying across the room and bringing half your equipment to the floor with you.

It's also a good idea to label both ends of a cable clearly with a piece of white sticky tape. The nightmare of determining which lead is going where is relieved this way. Even better, try to use different coloured leads where possible.

A common way of avoiding tangled leads all going to the same place is to use a loom. This is a simple method of grouping more than one lead together, and is most often used with the leads running from the mixer to the multi-track tape recorder and back. You can put them together yourself quite easily – all you need is a long length of screened cable, for cutting into individual lengths as required, connectors to be soldered on to each end of the cables and an expanding sleeve to group them all together. You can use a heatshrink sleeve at either end to secure the expanding sleeve. It doesn't take long, and saves a hell of a lot of hassle in the long run.

Socket to me

Despite what some think, running a load of recording gear will not put an unbearable strain on your home's mains supply. Most high-tech gear draws very little power – for example, the Korg 01W FD workstation requires 20 Watts (W) and the Fostex R8 multi-track tape deck needs 55W. A standard light bulb uses 60W, so running a small studio is the power equivalent of leaving all the lights on in the house.

"A nasty click in the middle of a lung-bursting 'Whoaaargh'."

It's safe to chain a number of 13 amp trailing sockets from a mains socket – provided they're made to British Standard and bought from a reputable dealer. The important thing is to ensure you use the proper fuse rating in the plug of each device being connected so that the fuse blows rapidly if there's a surge. A 13 amp fuse takes over 3kW before it'll blow, which is enough to fatally perturb the innards of most recording gear, not to mention yourself. So use 3 amp fuses in all but the trailing sockets.

Ideally, you should isolate the mains for the studio on a separate mains circuit, to ensure you get no interruptions from tumble dryers, lights and so on. It's also worth getting what's known as a technical earth when you're getting the supply put in. This is a big copper bar which you fix where the ground is moist, say near a drain, and run all the earths from the studio to it. It really cleans up all the buzzes, hums and interference that can be found in a studio.

Clicks and spikes

Another consideration is that of getting a smooth mains supply. Little mains 'spikes' made when, say, the fridge switches on can appear in recordings as take-destroying clicks. Musicians living in rural areas or near industrial parks find sudden fluctuations in the mains will not only affect their recordings but cause a computer to crash.

Spikes are caused by sudden surges in the mains voltage. It's not uncommon to find them going as high as 750V, which can be bloody annoying during a perfect vocal take when a nasty click appears right in the middle of a lung-bursting "Whoaaargh". Further, it can be lethal to computer data because, if you happen to be saving data, a spike can corrupt data on the disk. Nasty.

What you need is a mains filter, which smooths out transient surges and cuts the noise coming in on the mains. It can solve the problem where time switches in the house cause clicks on your monitors. They cost about £10 for a single plug, or around £60 to £70 for a four-way trailing socket with one built in, and should be available from your local electrical retailer.

As for dips, or even computer-crashing cuts in mains supply, consider 'mains conditioning'. A mains conditioner takes a wobbly mains supply (like when the guys on the grid have decided to up the mains frequency to 55Hz, the factory next door suddenly powers up with its megawatt-eating Abattoir-o-Matic and your fridge starts playing silly devils) and regulates it to a nice, constant (well, +/-10%) 240volts at 50Hz with no surges or dips. They cost between £150 to £350, and come in 3 amp, 5 amp and 13 amp versions.

The best solution is an uninterruptible power supply (or UPS). This gives a clean, isolated supply by using batteries (and they are included). Your power supply comes from the battery, which is being constantly recharged by the mains. It'll even keep going after a power cut, so you've got some time to finish off what you're doing and save your work to disk on the computer.

Cheaper units start at £60-£80, but they will only run your studio computers. If you need it to power outboard effects, keyboards and a large desk, you can get one with 10 minutes of uninterrupted power after a power cut for around £700. Prices

Canny connectors

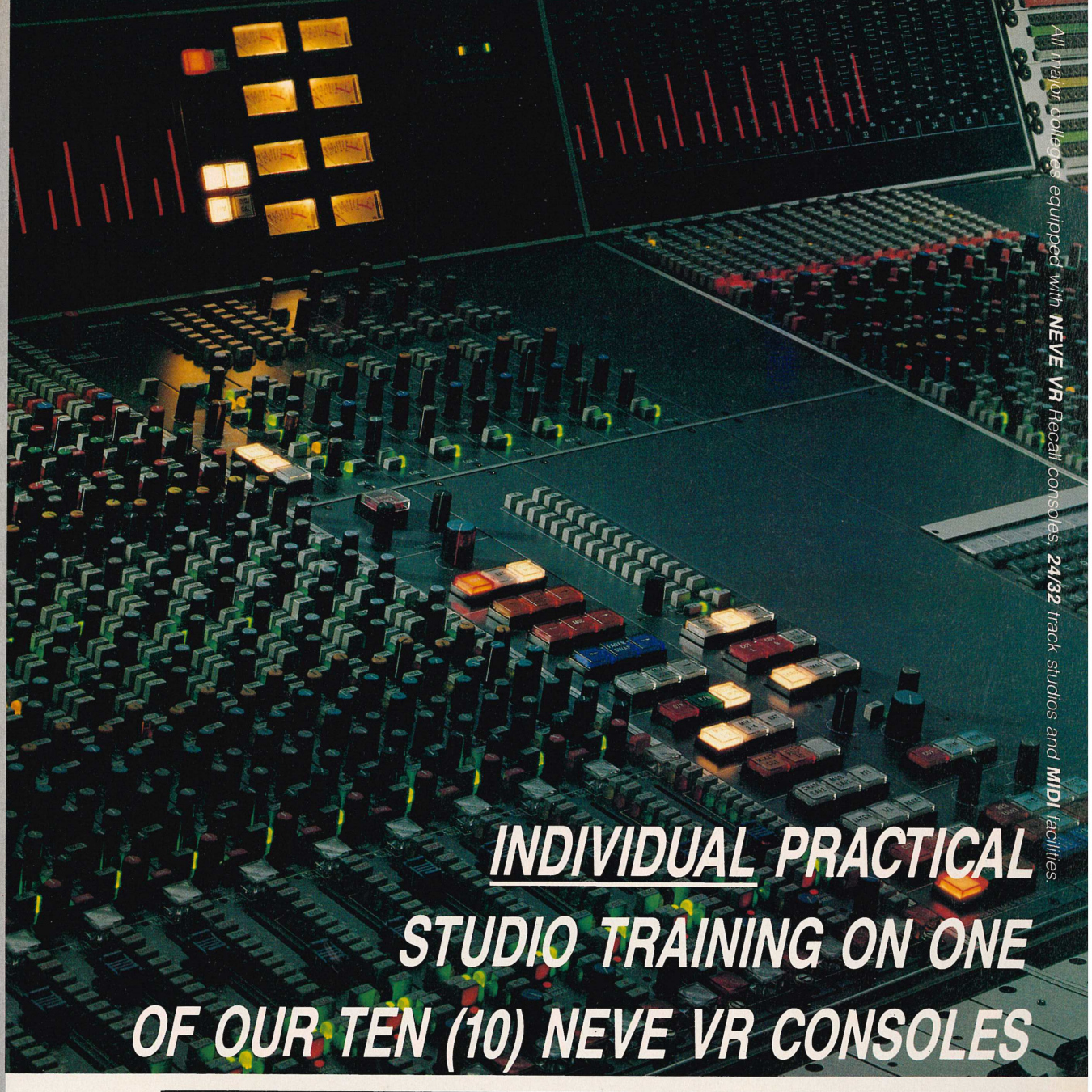
It's a good idea to buy a wide selection of audio connectors and adaptors for your home studio. Music gear comes with all manner of odd audio sockets: including phono sockets on portastudio outputs, 1/4-inch jacks on synths and mini jacks on portable DAT machines. Rather than butchering leads and soldering new plugs on each end, your local hi-fi dealer or branch of Tandys should be able to supply you with all the appropriate adaptors.

It's important to distinguish between the two types of 1/4-inch jack plugs and sockets. As well as the normal variety found on most synths and drum machines, there's also the GPO jack, sometimes referred to as a type-B jack. It has the same diameter as a normal jack, but has a smaller tip. This means that if it is plugged into a normal jack socket it may not make the proper connection.

Also beware of forcing a normal jack into a GPO-

◆ **A set of audio connectors – on the left is the familiar 'jack' or 'phone' plug, while on the right we see male and female XLR connectors prior to mating.**

do some damage to the contacts. GPO jacks are often to be found on patchbays to connect together the



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Expand your sound source with this amazing module. 28 note polyphony, with 192 instruments and 10 drum kits, MIDI AWM tone generation, you won't see better value for money this side of Christmas!

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SCOTLAND

Think of Scotland and you will think of Highland glens, whisky, the Loch Ness Monster, tartan, whisky, bagpipes, more whisky, music shops (!). Well, we do like to enjoy ourselves and music is a huge part of our lives. Which is why at AYRPLAY MUSIC we have spent time making sure we have the best equipment to hand for our ever increasing band of customers. Whether it be the latest ROLAND JV1000 synthesiser or the amazing AKAI SO1 sampler, or the equally amazing Proteus Vintage Keys, we have them in stock. And lots more besides. We have a range of guitars also, from the beautiful HAMER ARCHTOP at £1299 (also HAMER DIABLO and SPECIALS in stock!) down to some very nice models that won't break the bank. Marshall, Ensoniq, Trace Elliot, Vigier, Zoom, DAT machines, etc, etc. All priced as competitively as you will find anywhere in this magazine. (By the way we have some pretty special deals on Alesis at the moment!). We offer a next day delivery in the UK, take Visa and Access, are always ready to help with midi problems etc. We are pretty friendly and don't bite when we get asked stupid questions (like "What does M one D one stand for?"). So there. Got the message? Come and see us! We're trying very hard to be a little better than the rest.

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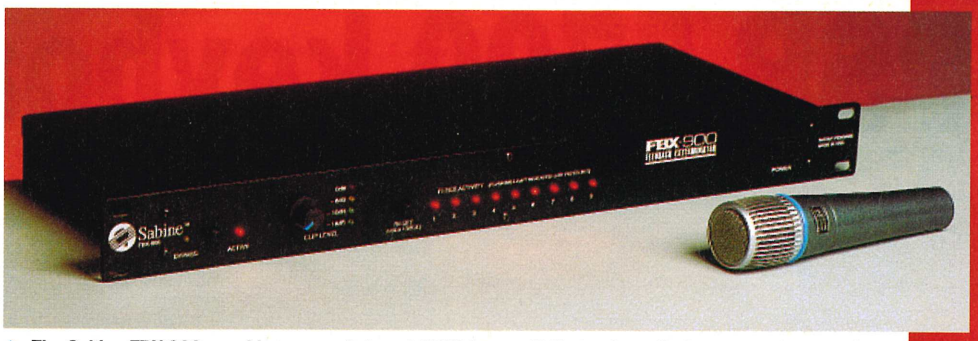
The Exterminator

Fed up with that feedback squeal every time you get on stage? Richard Wentk calls in Sabine's FBX-900 Feedback Exterminator...



◆ **The Sabine FBX-900: would you spend almost £500 for a unit that only really does one thing? Well, if what it does is eliminate that annoying feedback squeal, effortlessly... call in the Exterminator!**

JUST IMAGINE A RACK-MOUNTING unit that automatically checks for that nasty squealing howl you get when you put your mics too close to your speakers, then effortlessly damps it. The FBX-900 from Sabine promises no less, and all you have to do to make this magic happen is... almost nothing at all!

In a PA system, feedback occurs at a set of frequencies which 'ring' loudly through the speakers. This depends on the layout of the mics and speakers and the acoustics of the venue. Normally a live sound engineer will move the mics around or use equalisation to damp the level of these frequencies until the problem goes away. Unfortunately, moving the mics may restrict the performers and using EQ affects the overall sound, because ordinary equalisers affect a big wodge of the sound spectrum, rather than just the range around the offending frequencies.

The FBX-900 gets around this problem with a bank of digital filters that automatically homes in on the feedback frequencies and cuts them right down. Some kind of magic? In fact it's based on some clever digital signal processing. In theory any digital effects unit could do as much – *if* it had the right internal software. Sabine got there first.

There are nine filters available and each can be either fixed – you set them up once when you install the PA and then leave it alone – or floating, which means it tracks and eliminates new feedback frequencies in real time. These latter are ideal for collapsing mic stands and other horrifying stage accidents. The unit defaults to six fixed filters and three floating ones. This should do the job in most cases, but you can always reprogram this setting if you want to. The system's gain before feedback is set by the number of fixed filters, so allocating more fixed filters gives you a louder PA. In extreme cases with lots of feedback frequencies you can use two FBX-900s in series to bring the overall gain back up to something useable, but given how well a single FBX-900 works you won't have to do this often.

As hard as coffee

Fortunately, there are no complex controls to master. In use the FBX-900 doesn't require much more attention than a mug of coffee. It plugs in between your mixer output and the amplifier, and to initialise it after you've set up at a new venue you just plug it in, turn it on and hold down the reset button until all the lights flash. To set the fixed filter frequencies you just turn up the PA volume repeatedly until each fixed filter finds its working frequency and notch depth. When this happens, the filter's panel LED blinks so you know it's working for you. The floating filters are even simpler to use – they don't need any setting up at all. In practice all this takes just a few minutes, and all the settings are stored when you power down for the night, so they'll be ready and waiting for you when you turn up the next day with only three brain cells left working after that all night tour party.

Does it work? The answer is an unqualified 'yes. Superbly'. Put it up against a conventional equaliser and you'll see the FBX-900 offers a huge improvement in sound quality. The filters are extremely tight and sharp – 1/10 octave, with up to 50dB of cut – and so have a minimal effect on sound quality. It even takes up less rack space.

Are there any niggles? First, at nearly 500 quid, it's not cheap, and you really need two for a fully stereo PA. Second, you have to watch the signal levels very carefully. Overdrive this unit even slightly and you get instant ear-destroying digital grunge. Fortunately there's bags of headroom – more than 21dB on the balanced input – so this is unlikely to be a major problem. Finally, there is a slightly cold, CD-ish quality to the sound which comes from the digital conversion, but most people won't be aware of this in a live context – and it's a damn sight better than having to suffer the feedback!

But these are minor quibbles. This is a brilliant unit which does exactly what it claims to do and does it extremely well. It isn't cheap, but considering the time and hassle it saves it's superb value. If you play live and can afford one, buy one (or maybe more). Otherwise weep behind your squealing wall of noise. **FM**

Studio use?

The Sabine is designed for live use, and it's likely to find itself in main and monitor mix systems most of the time. If you have a warped mind you can probably think up a use for one as part of a monster effects patch, but 99.9% of the time it probably won't be worth the effort. Keep it live and you'll both be happy.

Tech specs

Input: quarter-inch unbalanced 10k Ω, balanced pin 2 hot >10k Ω
Output: quarter-inch unbalanced ~ 10 Ω, balanced pin 2 hot ~ 10 Ω
Frequency response: 20Hz to 17kHz + 1.5dB
Max levels: unbalanced +17dBV, balanced +25dBV
SNR: >86dB
Dynamic range: >92dB
Dimensions: 48.3 x 4.5 x 15.54 cms, 1U rack mounting case
Weight: 2.5kg

Sabine FBX-900

Feedback Exterminator
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FUTURE MUSIC PLATINUM AWARD

Verdict

Features

Ease of Use / Setting up

Quality of results

Value for money

It works brilliantly, it's good value, it comes in a sleek rack-mounting case with lots of flashing lights. What more could you ask?

FUTURE MUSIC RATING 91%

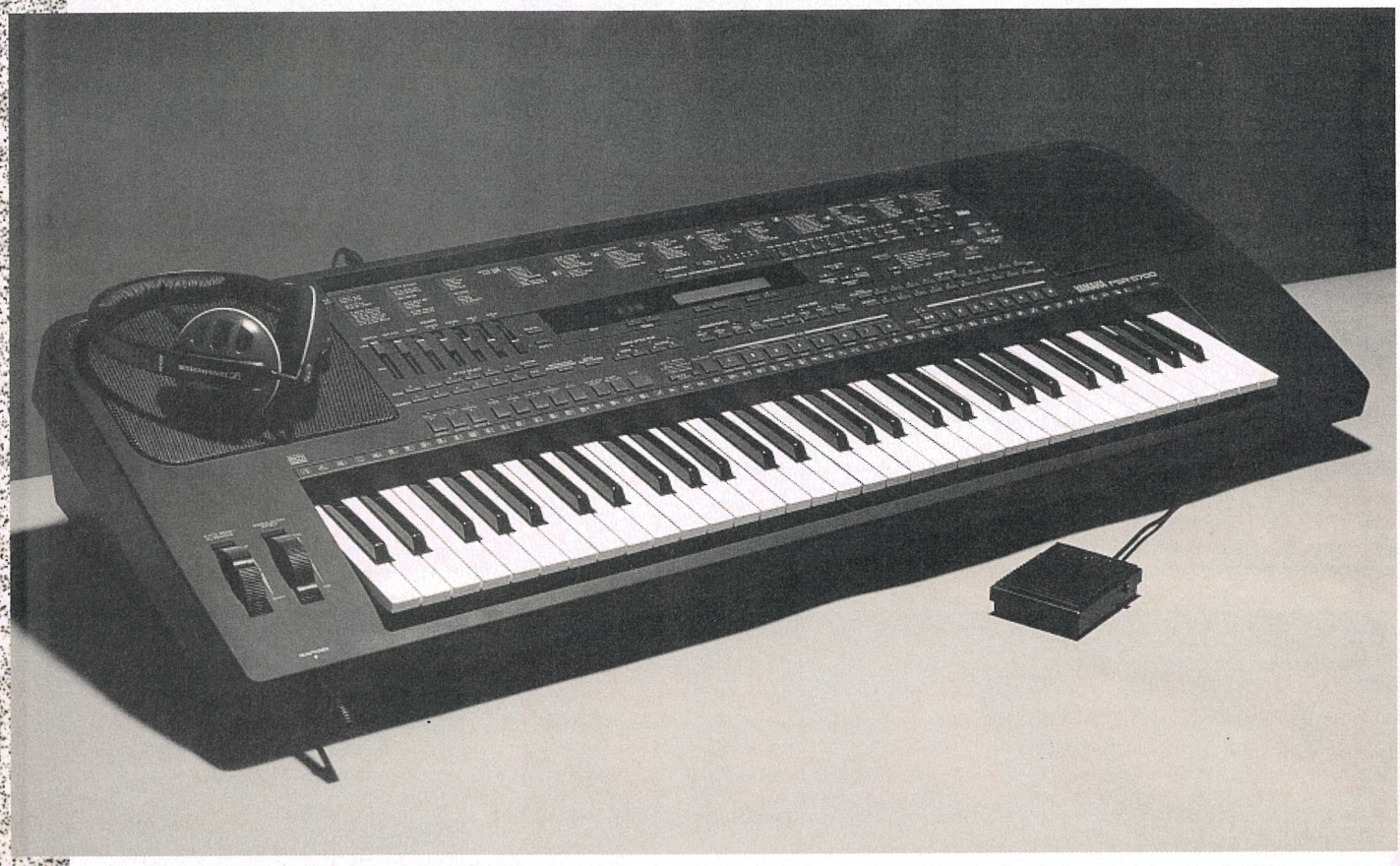
Alternatively...

There's not much happening down this neck of the woods. The only comparable product comes from Surrey Electronics Ltd, which offers the Stereo Stabilizer 5. This uses a 5Hz analogue frequency shift to kill feedback and comes in a 2U-high rack. According to Surrey it offers between 3dB and 6dB of additional volume before feedback sets in, but it costs a fair old £1,187.

Surrey Electronics Ltd, 0483 275997

COMPETITION

Win this superb Yamaha PSR-5700 keyboard



Now is your chance to get your hands on a gob-smacking £1,599 worth of superb Yamaha keyboard kit. All you have to do is answer few questions about yourself and send them in to us – do we make boosting your MIDI outfit easy for you, or what?

Yes, it's true! This natty portable Yamaha keyboard, which rates an impressive 85% in this very issue of *FM* (see the review on page 43), could be yours by the simple expedient of answering the questions on the opposite page and sending them to us.

If you've read the review, you'll know that the General MIDI PSR-5700 portable keyboard offers such whizzy facilities as 100 sampled sounds, a whacking 38-note polyphony, 48 effects, an 8-track sequencer, a built-in amp and speakers and a floppy disk drive by which you can store your compositional creations.

You could use it to add extra sounds to your MIDI setup, or trundle it down to the local club and make a killing doing a sing-a-long-a-karaoke-keyboard night, or something... Standard MIDI files, as all and set going while you warble away over the top. Neat, huh?

So why are we asking you to tell us about yourselves? Well, the more we know about you, the better we can make sure *FM* serves your needs.

After all, the readership of this magazine covers the interests of so many – back-bedroom ravers, pub rockers, recording studio pros, club DJs, and the rest – that you could really do with making your voice heard so we don't overlook your particular musical passion. That's what it's all about.

So give yourself a chance to win the keyboard and help us out at the same time – fill in the questionnaire opposite (or a photocopy thereof), and send it in.

The closing date for this competition is 31 May, 1993. And remember, if you don't want to mutilate your copy of *FM*, feel free

Rules

1 No employees or relatives of employees or pets of employees of Yamaha-Kemble or Future Publishing are eligible to win the prize offered, but may still send in the questionnaire out of the goodness of their hearts.

2 Multiple entries are definitely not allowed, not even if they're etched on to the pannier bracket of a Yamaha motorcycle, embossed on to the U-bend of a Yamaha toilet bowl or scratched boldly into the prop of a Yamaha outboard motor, because it'll muck up our survey analysis.

3 The editor's decision is final and no correspondence will be entered into.

4 No spurious 'rule 4s' will be permitted in

Tell us your secrets!

Future Music is still a pretty new magazine, and we are constantly looking for ways to improve what we are doing. We'd like to enlist your help by asking you to spare a spot of your time to answer a few questions so we can tailor what we do more accurately to what you want. It shouldn't take more than five minutes, and you could win that fabulous Yamaha PSR-5700 keyboard peering at you from the opposite page!

Answer the questions and return this page (or a photocopy) to the address below.

ABOUT THE MAGAZINE

1. How many issues of *Future Music* have you bought since it was launched?

.....

2. Whereabouts did you first hear about the magazine?

a ☐ Advertisement in another magazine
b ☐ Through the post
c ☐ From friends
d ☐ Just saw it in the newsagents

How would you rate the following sections of the magazine, on a scale of 10=excellent to 0=don't bother reading it:

3. News ...../10
4. Head-to-head reviews ...../10
5. Single product reviews...../10
6. 'How to' features ...../10
7. Advanced tutorials...../10
8. Interviews with bands & producers...../10
9. Interface (question & answers) ...../10
10. Reader ads ...../10
11. Letters...../10
12. Hardware reviews ...../10
13. Computer software reviews...../10
14. Reader demos...../10

If there was one type of feature you would like to see more of in *Future Music*, what would it be?

.....

.....

If there was one type of feature you would like to see taken out of *Future Music*, what would it be?

.....

.....

14. What other magazines do you read REGULARLY (ie, almost every issue)

a ☐ Melody Maker
b ☐ NME
c ☐ Music Technology
d ☐ Sound on Sound
e ☐ Making Music
f ☐ Home & Studio Recording
g ☐ A guitar magazine

If you rate *Future Music* as 10 out of 10, what score would you give to the following titles:

***Future Music* 10/10**

16. Music Technology...../10
17. Sound on Sound...../10
18. Home & Studio Recording...../10

ABOUT YOUR MUSIC

19. What equipment do you own?

a ☐ Synthesiser/workstation
b ☐ Sound module
c ☐ Home keyboard
d ☐ Multi-track recorder
e ☐ Hardware sequencer
f ☐ Effects unit
g ☐ Sampler
h ☐ Mixing desk
i ☐ Microphone
j ☐ Guitar
k ☐ Other MIDI instrument
l ☐ Drum machine
m ☐ Computer sound card
n ☐ Public address equipment

20. What equipment are you planning on buying in the next year?

a ☐ Synthesiser/workstation
b ☐ Sound module
c ☐ Home keyboard
d ☐ Multi-track recorder
e ☐ Hardware sequencer
f ☐ Effects unit
g ☐ Sampler
h ☐ Mixing desk
i ☐ Microphone
j ☐ Guitar
k ☐ Other MIDI instrument
l ☐ Drum machine
m ☐ Computer sound card
n ☐ Public address equipment

21. What computer do you own?

a ☐ None
b ☐ Atari ST
c ☐ Atari Falcon
d ☐ IBM-compatible PC
e ☐ Macintosh
f ☐ Amiga
g ☐ Archimedes
h ☐ Other - Please specify.....

.....

22. What do you use it for?

a ☐ Sequencing
b ☐ Patch editing
c ☐ Score writing
d ☐ Sample editing
e ☐ Playing games
f ☐ Other (accounting, word processing)

23. Roughly how much did you spend in the last year on music-related equipment and software?

.....

24. Roughly how much do you plan to spend in the next year on music equipment and software?

.....

25. If you were forced to place the music you make into one of the following categories (could be painful, I know), which would it be?

a ☐ Dance
b ☐ Techno
c ☐ Rock
d ☐ Jazz
e ☐ Blues
f ☐ Pop
g ☐ Avante garde
h ☐ New age
i ☐ Progressive
j ☐ Rap
k ☐ Heavy metal
l ☐ Industrial

ABOUT YOU

26. How old are you?

.....

27. What do you do?

a ☐ Professional musician
b ☐ Student
c ☐ Unemployed
d ☐ Working outside music

28. Do you:

a ☐ Play in a band?
b ☐ Record at home?
c ☐ Play live?
d ☐ Record in a professional studio?

29. How much do you earn per year?

a ☐ Under £10,000
b ☐ £10,000-£15,000
c ☐ £15,001-£25,000
d ☐ Over £25,000

30. Who are you (leave blank if you wish, but then you can't win the keyboard)?

Name.....

Address.....

.....

.....

.....**Postcode**.....

☐ **Tick here if you do not wish to receive information from *Future Music* and other companies.**

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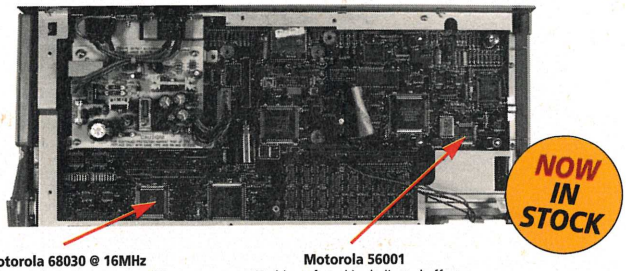
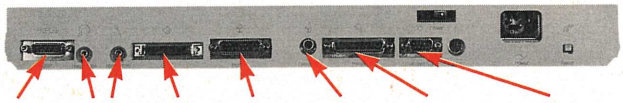
EVENLODE SOUNDWORKS



Motorola 68030 @ 16MHz
The Falcon uses the same processor chip as Apple's™ Mac™ IIci and IIvx etc

Motorola 56001
DSP chip as found in dedicated effects processors



DSP port Audio In/out expansion
Stereo In and Out 2 mini-jacks
SCSI Port Supports SCSI II
Monitor For a variety of displays
TV Out Modulated output
Printer Port For a variety of printers
Modem For communications devices

No other Atari has all this

❁ Motorola 68030 clocked at 16MHz ❁ Motorola 56001 DSP 56k processor
❁ Built-in 16bit A to D convertor ❁ Built-in 16bit D to A convertor
❁ 8 track 16bit DMA sound port with sampling rate up to 50KHz
❁ Sophisticated multiplexer connects DSP, DAC, ADC and sound DMA AND Stereo 8bit PCM sound (both compatible with TT030 MSTE and STE)
❁ 3 channel PSG sound ❁ 50 different video modes (up to 65,000 colours)
❁ SCSI II port with DMA ❁ TV modulator ❁ Stereo audio output
❁ Stereo Mic input **plus Steinberg Cubase compatible**

The new Atari Falcon030 processes 3,840,000 instructions in a second - that's 4 times faster than an Atari ST. it also utilises an extremely powerful DSP which works alongside the main processor to handle realtime calculations such as those necessary in processing music.

So what can you do with all that extra power?

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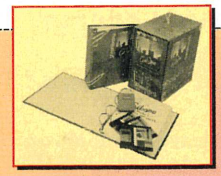

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Atari Software

The perfect partner for your Falcon030 is either Steinbergs Cubase 3 or Emagics Notator Logic program. Both offer high-level MIDI recording and Notation layout & print facilities.

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- ☐ ***Emagic Notator Logic ...£475***
- ☐ ***Emagic Notator SL3.15 .£179***

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- ☐ ***Cubase Windows.....£159***

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This month, we have some very special deals on Steinbergs two most popular Macintosh programs. Both are brand new releases and benefit from Steinbergs latest advances in sequencing technology.

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- ☐ ***Steinberg Cubase 2.5....£199***
- ☐ ***Emagic Notator Logic ...£475***

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Place your order

Into action

Mike Barnes takes the stage with *Inter-Actors 1.0* – a French answer to exotic MIDI device control.

Fancy a spot of experimental, quasi-random composition with your Mac? Or reprogramming synth patches in a weird sort of way? Take a look at *Inter-Actors*, a new concept in graphical real-time MIDI parameter control.

You can give screen objects, known as 'Actors', a defined MIDI message or parameter to control or translate, then shift them about with the mouse. The screen positions of the Actors defines their inter-relationship (how the parameter values are scaled relative to each other), and a complex construction can be built, say, to simultaneously control multiple synthesizer or MIDI mixer parameters. The resulting MIDI stream can be recorded into a sequencer via Apple's MIDI Manager or via Time Tech's own MIDI operating system, MIDIShare, that comes bundled with the package.

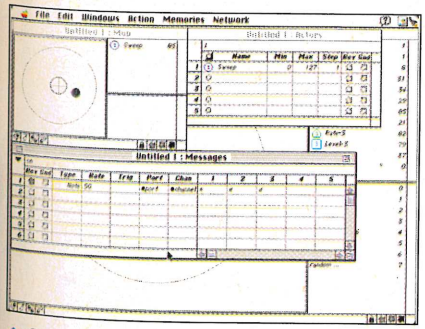
Stage and screen

When a new Actors Map is requested from the File menu, several interactive windows appear enabling you to enter the necessary MIDI commands and define the graphical appearance of the Actors. These windows are as follows: the Actors Map, where the Actors are displayed and positioned; the Actor Definition window, where the Actors are named, given a colour icon, the maxima and minima set, and MIDI transmission and reception selected; the Memories window, where up to 64 snapshots of the Actors Map position can be stored; and most importantly the Message window, where the exact details of the MIDI messages for each actor are stored in a series of data cells, spreadsheet fashion.

There is a huge amount of functionality hidden within these windows and it takes some time to get a clear overview of what happens where (and why) before settling comfortably with the routines of defining Actors. However, Time Tech has maintained standard double-click Mac conventions and sub-menus, so the navigation process soon becomes fast and familiar.

The basic creation process starts with naming an actor and giving it an icon and parameter range. The Actor then appears in the Map window as part of the list in the upper-right part of the split-window. From here the Actor can be dragged on to the circular stage and positioned in relation to other Actors in order to give it a meaningful starting value. Groups of Actors can be set to respond in a number of ways to movement, such as the Elastic mode which always forces a gravitational pull back to their original position on the stage.

In order to get the Actors to do anything, they each require a MIDI message definition (programmed in the Message window) and they have to be set for MIDI transmit and receive. Fortunately, Time Tech has simplified this typing process by providing cell templates for all types of MIDI messages and also an Auto-Configurable message for automatically learning a message from external equipment.



◆ Once you've set everything up – which Actors do what, how, when and with what – you can call

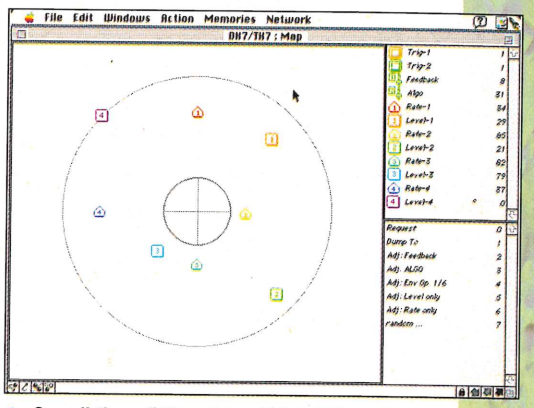
Inter-Acting

A very simple example using several Actors might be to make three Actors, one controlling MIDI Note Number, one controlling velocity, and one controlling duration. Alternatively, in a more complex scenario, an incoming MIDI message might recall a particular Actor Map, and then be translated by different Actors depending on certain pre-defined conditions. The software has the potential for building a highly complex set of simultaneous real-time MIDI processors (up to 64) that can all inter-relate and internally re-configure themselves by recalling different Maps. In this way, *Inter-Actors* can be used as a power-packed MIDI events processor or as a custom tool for single or multiple synthesizer voice-editing systems. In fact, you can control your MIDI devices in any number of bizarre ways.

> *"Avoid stage fright and order the demo version to get a feel for the system."*

Taking the plunge

Considering that it is both innovative, and equipped to deal with a wide variety of MIDI programming tasks and interfaces via two different MIDI environments (MIDI Manager, and MIDIShare), this is cheap software for the Mac. However, given that most musicians tend to avoid System Exclusive programming like the plague, Time Tech may still have a hard job persuading the average musician to bury their head in both MIDIShare, *Inter-Actors* and the general concept of programming software control surfaces. This sort of activity requires an inquiring mind, a willingness to learn some basic knowledge of how MIDI messages work, and some time devoted to experimenting on musically usable message maps. It also means some head scratching to get it



◆ **See all those little coloured blobs? They are the Actors, and that 'target' is the stage. Their relative positions affect your chosen parameters.**

Potential purchasers are advised to avoid stage fright and order the demo version to get a feel for the system. However, be warned that the demo run-time is only 20 minutes per session and the [SAVE] function is disabled.

Nonetheless, *Inter-Actors* is well worth taking a look at, especially for those adventurous types interested in experimental composition and custom sound design consoles – or those who are just ever hungry for cutting-edge MIDI gizmos. If you can get your head around the concept, it's fun. FM

Inter-Actors
Graphical real-time MIDI controller
900FF or US$180 ◆ Time Tech, BP 256, 69659 Villefranche Cedex, France
◆ Fax +33 74 65 19 32.

Verdict

Features

Ease of Use / Setting up

Quality of results

Value for money

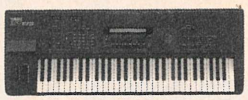
Quirky and unusual but powerful MIDI control environment. Get a 20 minute demo version for 150FF from the above address.

FUTURE MUSIC RATING 75%

Alternatively...

Inter-Actors **is the only Mac software to be totally dedicated to the design of complex interactive MIDI Parameter Control systems. However, Opcode's *MAX* is a more open-ended MIDI processing environment that can be programmed to perform similar tasks albeit with the need for some more in-depth programming knowledge.**
◆ ***MAX*** **£395 MCM Tel: 081 963 0663**

YAMAHA SY85



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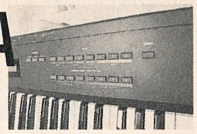

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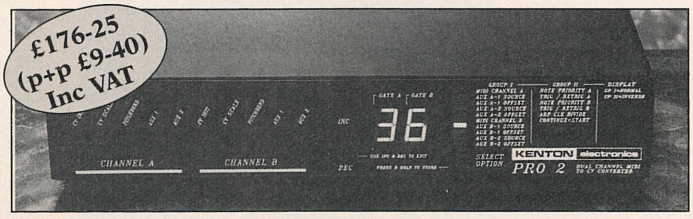

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KORG POLY 6/POLY 61	MOOG SOURCE
KORG TRIDENT MONOPOLY (In/Thru only)	OBERHEIM OB-1
KORG CX3/BX3 (In/Thru only)	SEQUENTIAL PRO-ONE
MEMORY MOOG	ROLAND SH-5
ROLAND JUPITER 8	ROLAND SH09
ROLAND JUNO 60/6	ROLAND SH-101
ROLAND VOCODER VP-330 (In/Thru only)	ARP ODYSSEY Mk 1 & 2
RHODES CHROMA	ARP 2600
YAMAHA PF15/10/YP40 (Out only)	YAMAHA CS-15
YAMAHA CS80/CS70M (In/Thru only)	ROLAND TB-303 (baseline)
SOLINA String Ensemble	

DRUM MACHINES (In/Out/Thru)	ORGANS (Out only)
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LINN 9000 CLOCK CONVERSION	YAMAHA A/B/C/D/E series
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ROLAND CR-78 (In/Thru only)	JVC/350/250
SIMMONS SDS 5 (In/Thru only)	HOHNER D98 & series
	HAMMOND tonewheel

A few examples are listed below - please phone or fax for other prices and details

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ROLAND TR-808 (MIDI In/Out/Thru)..... Price: £188.00 inc fitting. Kit price: £141.00

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No tape, no tears

Cakewalk Pro is the first sequencer for Windows to combine MIDI with digital audio. Panicos Georghiades and Gabriel Jacobs explain just how it's done.

With the arrival of machines like the Alesis ADAT, and the new multi-tracks from Fostex and Tascam, digital multi-track recording is no longer limited to the realms of big studios. But even though prices may be tumbling all the time, the £2000+ mark is still out of reach for most of us who work on demos in the back bedroom, and who are financially restricted to 4-track portastudios or second-hand 8-track reel-to-reels.

But all is not gloom and doom: the Windows 3.1 revolution is bringing cheaper and better products which are beginning to affect the way we'll be making music in the future. Some of these products are the 16-bit soundcards reviewed in *FM* 6. With these cards and some new software, it's possible to get digital multi-track capability on a PC without having to spend a fortune.

Cakewalk Pro is one of a new generation of Windows software sequencers, offering professional features like graphical editing of MIDI data, System Exclusive support, librarian features and editing using standard notation. What's more, it boasts the facility to play digital audio at the same time as MIDI sequences. This feature puts it ahead of current PC competition. Similar facilities are available on programs for the Mac and Atari, but they're more expensive. (Steinberg's *Cubase Audio* for the Mac or Atari costs around twice as much as *Cakewalk*.)

Further ingredients

So *Cakewalk* gives you the standard tape-transport icons for recording and playback, and an abundance of editing features.

To view *Cakewalk's* 256 tracks there's the familiar scrollable track-sheet view screen. This combines two resizeable windows, one showing basic track information, the other a track/bar view. The window with the basic track information – like name, transposition, volume, pan, loop, mute – is completely configurable using the mouse. You drag and resize the width of columns and also rearrange their order on the screen. So you see only the information you need.

Moving, copying or deleting tracks or parts of them is also done visually using drag-and-drop mouse movements. Select a number of bars, drag them to a different position, and that's it – they're moved. For editing individual notes you have two ▶▶

Alternatively...

The only real direct competition for *Cakewalk Pro* at the moment is *Cadenza for Windows* (see *FM* issue 5) and *Mastertracks Pro 4.6 for Windows*, both for the PC.

***Cakewalk* has multimedia capabilities and the CAL programming language, as does the 4.6 version of *Mastertracks Pro*. If you don't need these extra features, Cadenza is very capable. On the other hand, if you can make use of them, the extras are well worth the dosh.**

◆ *Cadenza for Windows* £295
Arbiter Tel: 081 202 1199
◆ *Mastertracks Pro 4.6 for Windows* £379
MCM Tel: 081 963 0663

Requirements

To run *Cakewalk Pro for Windows* you need a minimum of a 286 PC with 2Mb RAM, a mouse, Windows 3.1, and any MIDI interface supported by Windows. For digital audio you need a soundcard (preferably 16 bit), sound editing software, and a spacious hard disk (with a 100Mb you can record for six minutes in CD-quality stereo).

Sound and multimedia

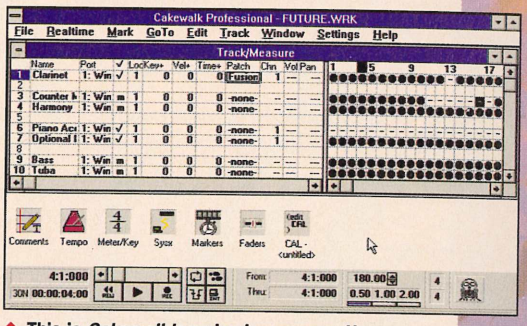
Cakewalk handles digital audio as a MIDI event, inserted in the Event List. Event Lists are a common feature of sequencer programs – they're where all the MIDI data making up a composition is displayed chronologically. But with *Cakewalk* you also have additional types of MIDI event, such as a Text file (for comments), a WAVe file and an MCIcmd (Media Control Interface command).

When you insert a WAVe file as an event, it is loaded into memory and triggered off at the specified MIDI time. The timing is perfect since the data is pre- loaded, though the disadvantage of this method is that you're restricted to the limits of your computer's memory.

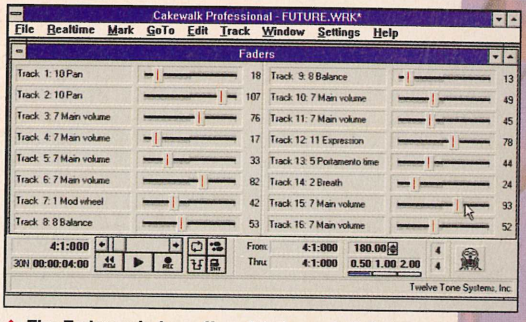
it its multimedia capabilities. *Cakewalk* can send MCI commands to any multimedia devices installed in your PC.

Using these commands, you can start and stop video recorders, play CDs at specific tracks, play digital video and so on. To play a WAVe file, you insert a simple MCI command such as 'Play Chorus.Wav', which loads and plays a WAVe file called Chorus.Wav. The file isn't pre-loaded into memory, as with the previous method, but executed in real time. This therefore enables you to play large WAVe files, though there's a slight delay – that you have to work out – which depends on the speed of your computer's hard disk.

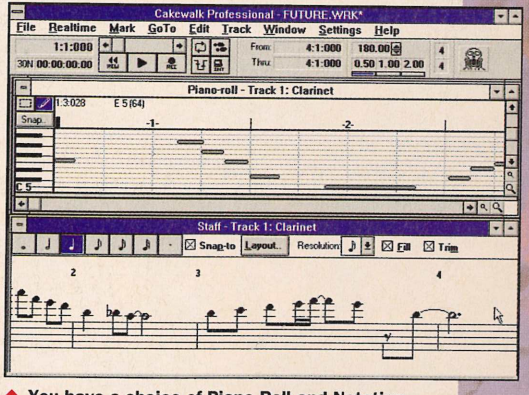
The implications of using MCI commands for live control in multimedia, sound production and


Cakewalk Professional - FUTURE.WRK
File Realtime Mark GoTo Edit Track Window Settings Help
Track/Measure
Comments Tempo Meter/Key Sysx Markers Faders CAL - <untitled>

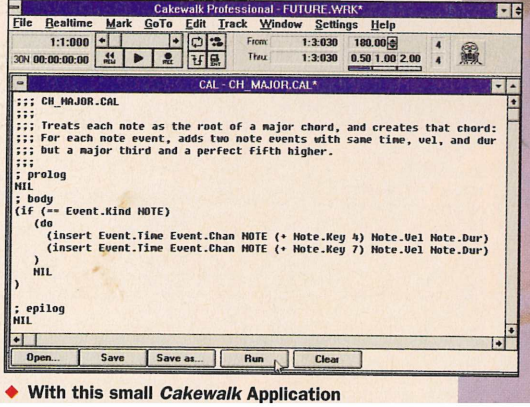
◆ **This is *Cakewalk's* main view screen. Here you can find all the general information about the tracks with a spreadsheet-like window by which you can scroll through the whole piece.**


Cakewalk Professional - FUTURE.WRK*
File Realtime Mark GoTo Edit Track Window Settings Help
Faders
Twelve Tone Systems, Inc.

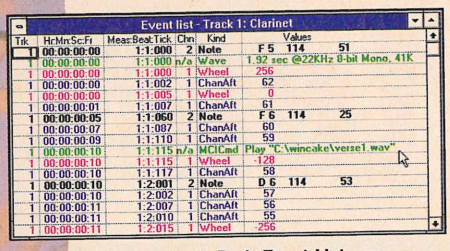
◆ **The Faders window offers 16-channel digital sound mixing facilities for any type of controller during your playback and recording.**


Cakewalk Professional - FUTURE.WRK*
File Realtime Mark GoTo Edit Track Window Settings Help
Piano-roll - Track 1: Clarinet
Staff - Track 1: Clarinet

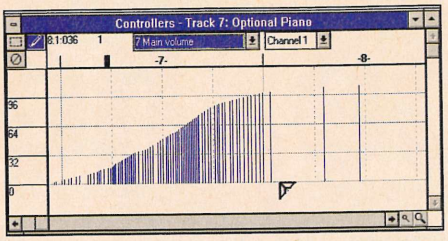
◆ **You have a choice of Piano Roll and Notation windows for editing individual notes. Using the Piano Roll, you can also edit whole sections.**


Cakewalk Professional - FUTURE.WRK*
File Realtime Mark GoTo Edit Track Window Settings Help
CAL - CH_MAJOR.CAL*
;;; CH_MAJOR.CAL
;;; Treats each note as the root of a major chord, and creates that chord:
;;; For each note event, adds two note events with same time, vel, and dur
;;; but a major third and a perfect fifth higher.
; prolog
; body
; epilog
Open... Save Save as... Run Clear

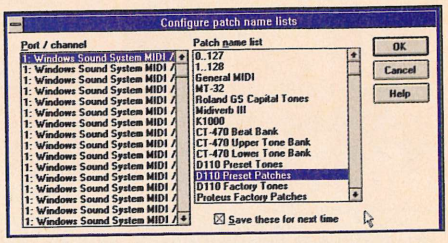
◆ **With this small *Cakewalk* Application**



◆ *Cakewalk Pro's* Event List can include Windows digital audio (WAV) files and multimedia MCI commands.



◆ *Cakewalk* offers graphical editing of all Controller events using the mouse, plus pitch-bend and after-touch, but unfortunately, not note-on velocity.



◆ There are preset instrument tables for known synths. You can also create your own tables, and so select instruments by name, not patch number.

windows: the Piano Roll window and, for traditional notation, the Staff window.

In either window you can delete and insert individual notes, lengthen them, move them and so on. The Piano Roll window, however, is more advanced, since you can also edit sections as well as individual notes. This can't be done in the Staff window, something which is no doubt related to the fact that this window is a new *Cakewalk* feature which hasn't yet been fully developed: for instance, there's no standard-notation print option (we're told this will come on a future version).

The Event List looks like all others of its ilk, but one important feature is that different event types are displayed in different colours, making it easier to spot them. The Event List can also handle text files as MIDI events, so you can insert comments at specific times within a musical sequence. You can also place markers to label sections of the score and jump easily from one marker to another.

Via the Controller window you can use the mouse to draw performance parameters for individual tracks. For example, to bend the pitch of a note, you simply draw a graph of the bend. Similarly, you can pan sounds left and right, apply aftertouch, or control other performance parameters supported by your synths and sound modules.

There's also a Faders window, which transforms the screen into a 16-channel digital sound mixer. And the faders can be programmed to control not just volume, but any MIDI controller message during either playback or record, so you are able to produce the perfect mix single-handed.

DIY stuff

Cakewalk Pro for Windows performs most of the other standard sequencer functions such as quantisation and transposition. What's really interesting, however, is that all of these functions are made easily accessible through a comparatively friendly, special programming language called CAL (Cakewalk Application Language).

In about five lines you can write a program to pick up every note in a track and create a chord out of each one – for example by adding a third, a fifth and perhaps an octave.

The CAL language is far more powerful and flexible than that. In fact, there's little you won't be able to do with it when it comes to transforming a score. You can write your own chord generators, synthesizer patch-editing routines, types of transpositions, inversions and so on. It's not very often you find such a powerful tool in a sequencer.

Cakewalk offers many other features such as MIDI-exclusive support and the use of the Windows Clipboard for copying MIDI data between different music programs (that is, not just within *Cakewalk*).

Cakewalk Pro for Windows may be expensive, but it's an investment if you're serious about making music and you've got a soundcard. This package, with its professional sequencer and management of audio files, will unleash even greater potential from your set-up. FM

Times change

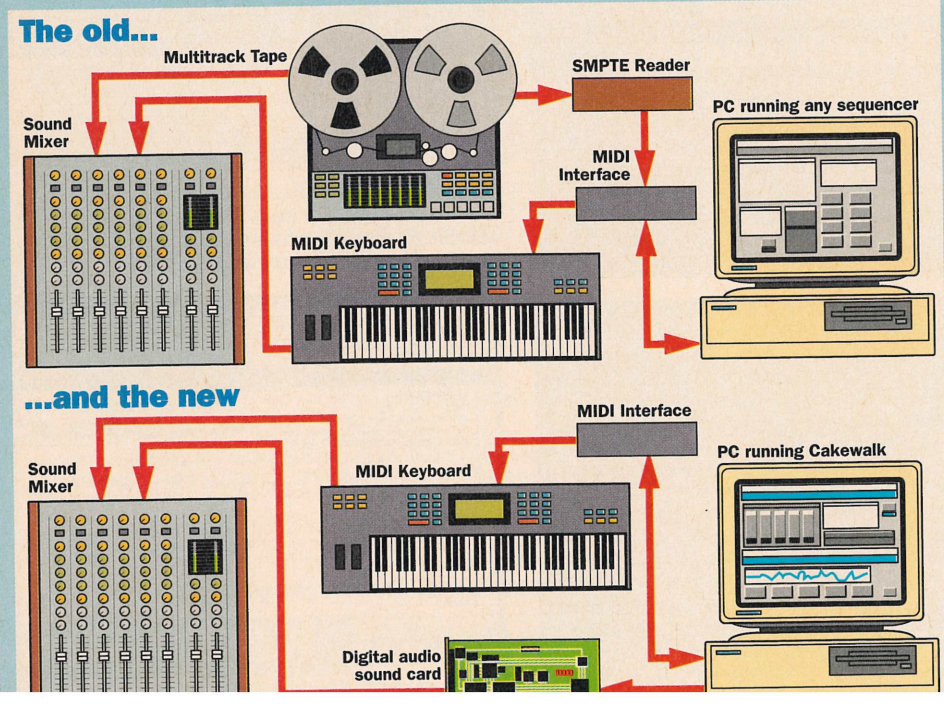
Ordinarily, you would use a multi-track recorder for acoustic tracks, striping one track with SMPTE code and recording the acoustic parts on the remaining tracks. An SMPTE reader converts the SMPTE code to SPP (MIDI Song Position Pointers) or MTC (MIDI Time Code) and sends this to the sequencer via the PC's MIDI interface.

The sequencer plays back in sync with the tape machine. The MIDI data sent out from the sequencer plays the synths and the sound modules and their audio outputs and those of the multi-track are fed into a sound mixer.

Now it is possible to record your acoustic tracks directly to the hard disk of your PC using a soundcard, saving them as mono or stereo WAVe files. Using special editing software, starting at around £85 for *Digital Soup*, you mix up to 16 acoustic tracks into a stereo track. The resulting mixed audio track doesn't have to be one continuous file. You can break it up into several meaningful segments, each stored in a separate WAVe file.

If we're talking about a vocals track, for example, you can have separate files holding a chorus, a verse, a sentence, or even a single word. Alternatively, you can have a single riff of your acoustic track is, say, a guitar or sax solo. You then record all the MIDI synthesiser tracks as normal using a sequencer.

And this is where *Cakewalk* comes in. *Cakewalk's* Event List editing window enables you to insert the names of Windows WAVe files which hold your acoustic stereo track mix, at the specific MIDI times at which you want these played. The MIDI data goes out to the sound modules which are plugged into the mixer, and the WAVe files play through the soundcard whose stereo output is now fed to the mixer instead of the outputs of the multi-track.



Cakewalk Pro for Windows

PC sequencing & digital audio software

£299 ◆ X-Ware Technology, Sladenwood Business Centre, Todmordern Road, Littleborough, Lancs OL15 9EW ◆ Tel: 0706 372299

Verdict

Features

Ease of Use / Setting up

Quality of results

Value for money

One of the top two sequencers for Windows. It combines MIDI, digital audio playback and multimedia capabilities.

FUTURE MUSIC RATING 88%

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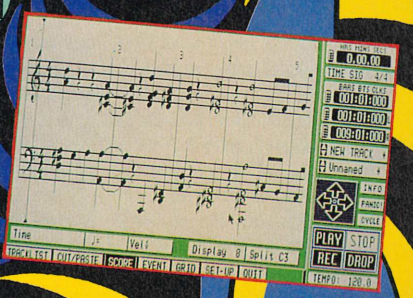
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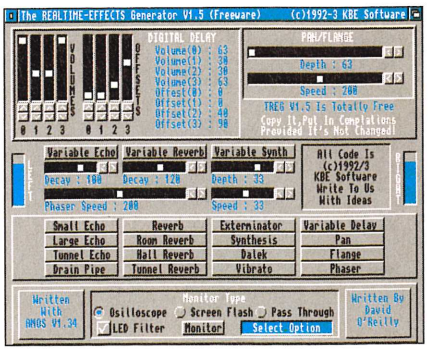
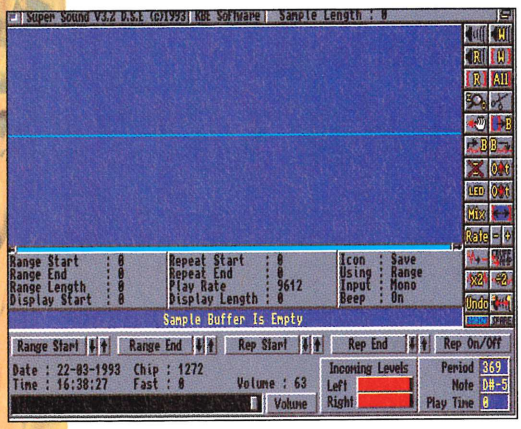


◆ ***SuperSound's*** **real-time effects generator**



◆ **The main *SuperSound* editing screen. Notice the function buttons down the side of the screen.**

Phil South examines a cost-effective means of sampling on the Amiga.

Happy with 8-bit quality? Amiga sampling software and sample editors at this resolution are easily affordable. One such package is *SuperSound*, recently upgraded to version III. It's an example of 'licenseware', a step up from PD or shareware in that you pay for the privilege of using the software before you actually use it. The fee is lightly larger than the PD fee but smaller than a shareware fee; and after you pay the the initial fee, that's all the money you'll have to find.

Simple and good

Even though it's licenseware, *SuperSound* delivers the same quality of editing that you'd expect from something like *AMAS 2* or *Stereo Master* (Microdeal's sampling packages), and unbelievably the software is written not in Assembler or C, but in AMOS.

As well as being a sample editor, *SuperSound* will enable you to sample directly to the program using any normal sampler like SunRize's *Perfect Sound* or *Stereo Master*. Reverse, flip, cut and paste your samples, and add echo and flanging effects to enhance their presentation. You can fade or taper the end of a sample with a sharp drop or fade in. You can also add a number of effects such as 'metallic', which gives a Dalek-like metal timbre to the note, distorting and boosting harsh frequencies to a sometimes alarming degree.

The program is simple to use and utilises menus as well as buttons in a toolbox-style array down the right-hand side of the screen. Two up-and-down-style VU meters at the left and right corners of the screen show the input from any samplers attached. Although you can sample with the software it doesn't require that you fit the unit to your machine for the editing and treatment functions to work.

> *"Unbelievably, the software is written in AMOS."*

Like all AMOS programs, *SuperSound* multitasks and enables you to step back and forth to the workbench using the [LEFT] and [AMIGA]-[A] key combination.

Cut and paste editing is done by choosing a range with the mouse pointer and then simply selecting either the cut and paste menu items or hitting the Cut and Paste buttons on the toolbox bar.

External modules

Two other programs are included: *Sample Keyboard* and *TREG*. The *Keyboard* program shows you a piano keyboard on the screen by which you can store samples, play them from the Amiga keyboard and then store them as 'sequences'. Don't get too excited – it's only a sample player and you can't layer up voice after voice. You can load samples into any of the instruments along the bottom of the screen and change instruments either by clicking on the buttons with the mouse or hitting the function keys.

TREG, however, is much more interesting, enabling you to use your Amiga as a real-time effects box for echo, reverb and other simple delay-line-type effects. Different effects are achieved by using sliders on-screen to adjust the ways in which the sound is treated and returned to you. The which can then be plugged into your multitrack recorder, or even a sampler on the back of another Amiga. As well as creating your own effects from scratch you can call up the presets from the bank down at the bottom of the screen. This is a useful utility, and although it isn't as powerful as a proper digital multi-effects unit like a Quadverb, the program does only cost £3.50.

Thumbs up

SuperSound is cheap and cheerful, but don't let that fool you into thinking it's not worth having. For the price, it's a fun-packed little tool which will find a lot of varied uses in the Amiga musician's arsenal. It's not fast, but as a compiled piece of extended BASIC it's nothing short of astonishing. Well done KBE Software's Damon Bennet and David O'Reilly for a top-notch job.

If only someone would come up with something like the sample keyboard which ran under MIDI: a sort of software version of the Akai range. Not necessarily 16-bit, but just enough to sample a sound and play it back via MIDI. Some devices like AMAS 2 (which has a MIDI interface built in) claim to do this, but they only play MIDI over a very narrow one- or two-octave range. Would that *SuperSound* could sample a sound and play it back over the whole keyboard; that is not within its capabilities. Anyone out there want to code a proper MIDI sampler for the Amiga? **FM**

AMOS, briefly

AMOS is one of the premier programming languages on the Amiga. Anyone with a rudimentary knowledge of BASIC can use it to whip up superb programs, with full access to the Amiga's astonishing graphics and sound facilities. All Amiga graphics resolutions are supported as well as sampled sounds and *SoundTracker/Noisetracker* song modules. Using AMOS, any kind of program you can write in other languages can be written simply and quickly. There are two modules available too for compiling AMOS programs into machine code (like *SuperSound*) and a 3D module for the creation of 3D graphics.

The various types of AMOS, including AMOS Professional and Easy AMOS, are available from your local stock-

SuperSound III

Amiga sampling/editing software ◆ £3.50 ◆ Amiganuts, 12 Hinkler Road, Southampton, Hants, SO2 6FT ◆ Fax: 0703 470017

Verdict

Features

Ease of Use / Setting up

Quality of results

Value for money

For the price, you can't really go wrong; *SuperSound* offers as much if not more than most commercial products.

FUTURE MUSIC RATING 70%

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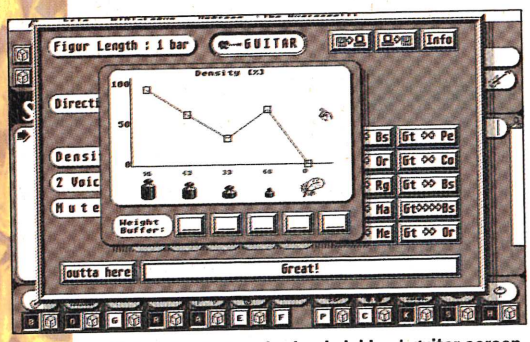


◆ *Session Partner's* clearly laid-out guitar screen enables you to quickly set the accents within the rhythm pattern and mute the sound as required.

Howdy pard'

Session Partner aims to help ST and PC users who are able to string chord sequences together but are useless at programming rhythm tracks. Jon Bates investigates.

MOST PEOPLE CAN KNOCK out a few chords on a keyboard. With practice they might be able to put a drum beat behind it and maybe a bass line. However, producing a solid rhythm track with chords, counter-melodies, additional percussion and drum fills co-ordinated with bass lines, is usually a job for a specialist music programmer experienced in analysing styles and constituent parts.

It is disheartening for the rest of us if, after hours programming a backing track, the end result isn't as interesting as it should be. *Session Partner* aims to solve this problem and take the hard work out of composition by giving you an extremely wide choice of styles, rhythms and backing sounds.

Any part of the backing can either be tightly controlled by you or left to the program to come up with optional accompaniments and fills. Anything which the program can create with a random factor is indicated by a dice icon. Hit the dice to find out what happens – it's never the same twice.

You can have up to 16 separate chord patterns of up to six bars each, which are chosen manually from the screen. You might need to know some chord theory to get the most out from the long list of chord variations – major, minor, diminished 7th, augmented 9th, suspended 4th, and so on. These can be put anywhere in the bar; a 'snap' function lines chords up to whatever limits you set – one per bar, or a chord on the nearest beat or quarter of a beat.

Smarter musicians can give all chords independent bass lines. For guitarists and keyboard players used to reading chord charts, this is second nature, but it might prove a little tricky at first for the beginner. It's best to keep things simple and get the program to help out if you're unsure.

Having set up a chord pattern, you'll want to decide on the style – or maybe decide a style and then a pattern; it's up to you. The program offers a menu of styles covering the whole gamut of popular rhythms from Pop Ballad to Soft Reggae via Hard Rock. There are additional disks that contain more styles and grooves.

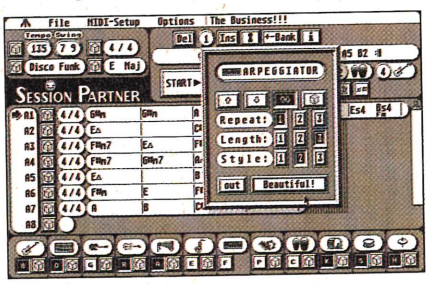
Select the style, hit Start and listen as the program plays through the chord sequence. So far, this is not very different from other programs which offer backing styles in the manner of self-contained single keyboards. Where *Session Partner* scores heavily is on its ability to quickly produce new variations to the backings. The easiest way is to click on the dice icon marked Band. This reconfigures the backing patterns and voices – and it is good fun to just keep hitting this until a pattern occurs that takes your fancy.

Reaching the parts...

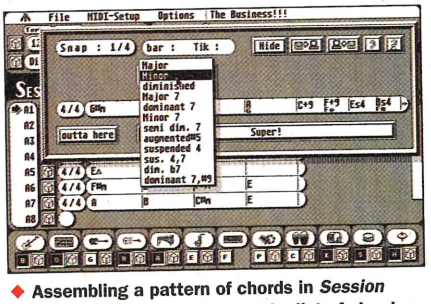
Across the bottom of the screen are the backing track parts. Drums are separated into hi-hat, snare and kick, plus two additional percussion sections. Instrumentally, there are many other parts: bass, rhythm guitar, keyboards, vibraphone, rhythmic arpeggio, counter-melody, keyboard pad (usually another rhythmic pattern) and a second guitar. These can be subjected to the dice factor individually for variety. And they can be muted at will.

This 'dice factor' means that, if inspiration is not forthcoming, you can throw the dice for your chord pattern. A random choice of chords appears – although 'random' is not really a fair term: there is some sort of musical logic at work which makes the chords work together; they are related to the key of the piece, which is selected in the top left of the screen. For real 'chance music' (who said 'aleatoric'?), you can throw dice for tempo, time signature, style and what is termed the 'Swing Factor' – the amount the rhythm pattern verges towards swing from a straight-beat feel.

Chord sequences are chained to- ▶▶



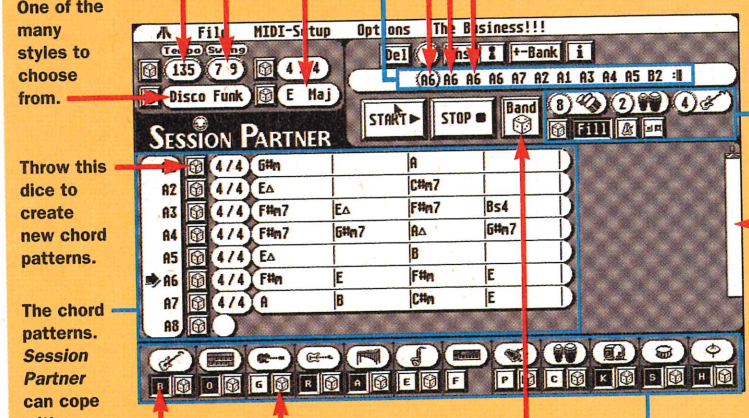
◆ The Arpeggiator: this enables you to arrange how the notes repeat themselves, or you can throw the dice for a completely different pattern.



◆ Assembling a pattern of chords in *Session Partner*. You can choose from the list of chord types and also the alternative bass lines.

A productive partnership

Session Partner's main screen gives you all the controls you need to create your own backing tracks.


Tempo setting.
Swing factor.
The key of this piece.
Here's where all the chord patterns are chained together to make up complete songs.
Although pattern A6 occurs three times, each play-through has programmed variations.
One of the many styles to choose from.
The detailed, inventive drum fill section – no two fills are precisely the same.
Throw this dice to create new chord patterns.
Clipboard for copying one instrument or pattern to another.
The chord patterns. Session Partner can cope with many complex chords.
Turn any instrument
Throw a dice to change the
Change the feel of the backing by
12 backing instruments to accompany the chords.
SESSION PARTNER
START
STOP
Band
Fill
Disco Funk
E Maj

Chord charts

Those mysterious letters and figures that appear in sheet music do actually mean something. *Session Partner* enters all the chords and bass lines by this shorthand, and the basics of it are very simple. C major chords are simply written C. C with a dominant 7th is C7, C minor is Cmin, and so on. Chord charts use signs like '+', which indicates a sharpened 5th in the chord, and a '▲' to indicate a major 7th chord. If the bass line is to alter from the root notes of the chord it is indicated like this: $^{C}/_{G}$, which means a C chord over a G bass note.

Obviously a complete guide to chords and chord charts would not be possible in this short space, but even if you

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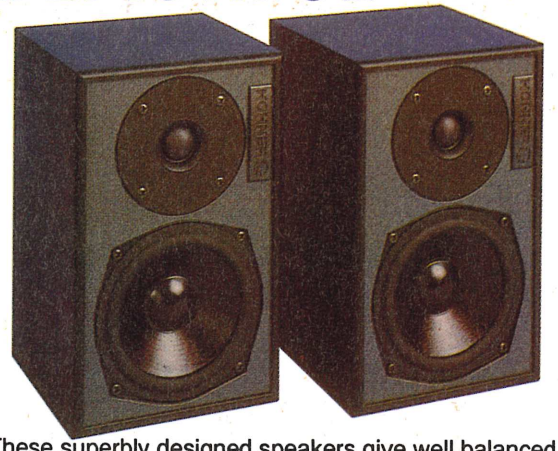

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gether in the top-right screen, sequence following sequence up to a total of 63 entries with either a repeat or stop sign at the end. The clever part is that each appearance of a sequence can be varied – so if you have a sequence repeated four times, you can mute some instruments for the first appearance and demute them for subsequent repeats. The 'fill' section can put in fills of whatever length you ask – these are separated into toms, percussion and bass, and can come in every fourth bar or at the end of a phrase. You can achieve infinite variety by diving into the backing patterns and altering the frequency and accents of, say, the chord strumming. In short, you can virtually program your own backing.

Version 2 of *Session Partner* (available in early summer) will have a drum grid to enter precise patterns – perhaps this should be extended to other patterns like bass and chords as well. Additional style disks will load up pre-programmed accompaniment patterns which you can use either on individual instruments or on all of them.

Auto-accompaniment

The novelty item, *Backing Partner,* is included in the package. This enables you to play chords on the keyboard and play back the auto-accompaniment for any chosen sequence. Maybe they should extend this so that you can input chords directly from the keyboard without having to think too hard about the names of the chords.

Session Partner can't load MIDI files, but it can save them which makes it a useful working tool. After experimenting with different patterns and variations, and when you have the backing to your liking, save it to MIDI file. Then load it into a sequencer to add melody and generally flesh it out. Here *Session Partner* has acted as a compositional sketch-pad and palette, enabling you to try out and hear ideas very quickly.

Session Partner is not cheap at £149 (or £199 for the PC version), but is, nevertheless, a very musical program that makes it easy to derive original backing tracks with minimum fuss. In its present version, a musician well-versed in reading chord charts will be able to get much more from it than a beginner, although a novice can get a lot of rewarding fun from dice-throwing and borrowing grooves and patterns. It is not hard to understand – in fact, it's quite instinctive.

The program can be configured for any synthesizer and drum set-up, although you will save yourself an awful lot of time if you have a MIDI-compatible synth. For a musician who needs to get tracks together, but must keep an eye fixed on the clock, this is an ideal tool. **FM**

Alternatively...

You could try the similarly named *Feeling Partner,* which is a more detailed program in terms of organising the backing variations but is probably not quite so instinctive to use, because it uses complex algorithmic variations.

The other rival in terms of chord programming is *Band in a Box,* which lays out the whole chord scheme and picks up backing styles, fills and so on from the menus and additional style disks, but is not so varied or interactive in its conception or results.

◆ *Band in a Box* £69
Zone Distribution Tel: 071 738 5444.
◆ *Feeling Partner* £149
also from Zone.

Session Partner

ST/PC arranging and composition software
£149 (ST) £199 (PC) ◆ Newtronic,
62B Manor Avenue, London SE4 1TE
◆ Tel: 081 691 1087

Verdict

Features

Ease of Use / Setting up

Quality of results

Value for money

A very musical program that produces highly commendable backing tracks but allows you plenty of originality – at a price though.

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The Blue Notes

It's big, it's blue and it's got lots of words in it. Yes, you've reached that chunk of *FM* that offers answers, advice and bargains galore. Good or what?

WELCOME TO THE BLUE NOTES – they're like a magazine within a magazine, packed with even more information, advice, bargains and contacts to help you get more out of your music making

◆ The Interface section is where you can find the solutions to your music technology problems by calling on our team of experts. If you've got a problem to do with MIDI, sequencing, recording, or any sound module, synth or keyboard ever made... well, it never hurts to ask. In any case, even if our Interface panel members don't know the answer to your problem straight off, they'll find it. Interface begins on this page.

◆ The *Future Music* Buyers' Guides, updated every month, are an invaluable reference guide to the equipment and software currently available. They start on page 85 this issue.

◆ On page 82 is the section where we review your demos, giving practical advice on how to improve your sound and helping you get noticed. And why not let everyone know about your band, where you're playing and when? There's a handy form you can use on page 84.

◆ Finally, there's the bit where we print your ads *free*, helping you find a bargain or a buyer. Turn to page 96 for some great second-hand bargains.

Interface

Our hand-picked panel of experts dives headlong into your queries and blasts them all to bits.

Polyphonic plight

Q I am writing songs using a second-hand [Yamaha] YS200 keyboard, Atari 520 STE (upgraded to 1Mbyte) and *Cubase* v2. Because I can use only eight notes maximum throughout the arrangement, it seems virtually impossible to write a 'serious groove' with a full and balanced sound. I thought about purchasing a drum machine, but I feel that I still would not have enough notes to lay down horns or strings tracks. Can you suggest ways (other than getting rid of my keyboard) which will put an end to my misery?
Howard Weaver, Bradford

A Though the Yamaha YS200 is basically a TX81Z, four-operator FM synth with on-board DSP (digital signal processing), it is a fairly limited device. Because of the polyphony restrictions, the only constructive advice to solve your problem is perhaps to spend more time voice programming so that you can optimise the sound of a stripped-down arrangement.

Another way to give the impression of many different sounds appearing thoughout an arrangement is to use Program Changes (as explained in the 'What's MIDI?' column in *FM* 6), but no matter how much program changing you do, at the end of the day you simply cannot get more than one note of bass, four piano notes, two notes (for brass in octaves), and one note for a high string line or FM percussion happening simultaneously on this instrument.

I'm sorry to say that any ideas of big arrangements are out unless you consider adding either another tone module or four-

If you are happy with the FM sounds you've got and you're strapped for cash, you could probably pick up a TX81Z for around £120 second-hand and give yourself another eight notes of polyphony and maintain compatibility with your existing sounds – though this module still has no drums. A further alternative would be to get a Roland MT-32, a versatile box of sounds (including drums) that can be picked up new for around £200, which still represents great value for money.

However, maybe the smart move would be to live with the restrictions, work on sparse arrangements in the short term, and save for a Yamaha TG100 tone generator (£350), which will give you drums, a whole new palette of sampled sounds and plenty of polyphony to play with.

Also, watch out for some new baby tone generators from Kawai, due anytime now, which will promise to offer lots of polyphony, sampled sounds and effects for very little outlay.

◆ Kawai Tel: 0202 296629
◆ Roland Tel: 0252 816181

No no, no n'no no, no n'no no...

...no, no there's no limit to what the *Future Music* team of techno-techno-techno-techno-heads can do for you and your problems. The gurus gathered are:

Michael Barnes – musician and programmer
Jon Bates – musician and music tech lecturer
Andy Nuttall – musician and myopic
Martin Tennant – musician and consultant
Tim Tucker – musician and bassist
Richard Wentk – musician and technician
Dave Robinson – writer, skier, actor, scholar, bungee-jumper... oh, and musician.

Whatever is befuddling your backing tracks or confusing your keyboards, write to us and we'll find the answer – there's no valley too deep, no mountain too high (*oh shut UP – ed*). Remember, though, we can only answer your questions on the Interface pages, so no phone calls in the middle of the day, if you don't mind. And that means Saturdays too – we work hard here, you know. Personal replies by mail are out too. If you want individual attention, try Molly Parkin.

Write to: Interface, *Future Music*, 30 Monmouth Street, Bath, Avon BA1 2BW

Lighting up the DX

Q I have some questions about the Yamaha DX7 synthesizer. ❶ Is it possible to upgrade the DX7 so it is multi-timbral? If so, what does it involve and how much would it cost?
❷ Are there any patch librarians and editors around for the DX7 (and also the TX81Z) that I can run on my PC?
❸ Is it possible to get a backlight for the LCD panel on the DX7?
P Jackson, Accrington, Lancashire

A Some answers: ❶ Not long after the DX7 was released, several manufacturers made upgrade boards which added extra functionality to the instrument. The most famous and popular was the 'E! Board' by the American company Grey Matter Systems, which not only made the DX7 multi-timbral but added a whole host of exotic MIDI functions and transformed the instrument into the first workstation.

There's been a resurgence of interest in

SY77 heaven

Q I am in a band that has recently started playing live. We are using a Yamaha SY77 to generate the backing music and, while this has proved an excellent purchase, it being an invaluable writing tool, there are two seemingly insurmountable problems when using it live. First, the internal memory can only hold one song at a time. This means a 20- to 30-second pause between songs while the next track is being loaded from disk. Second, because all the music comes from one unit, the sounds cannot be treated separately at the mixing desk. This is a particular problem with the drums, which are rather weak on the SY77 anyway.

With a view to solving these problems and generally improving the quality of our music, we are seriously considering buying an Atari Falcon. The *On Stage* MIDI file editing software (reviewed in *FM* 1) would solve the continuity problem, while a budget sampler such as *Replay 16* (in the same issue) would enable us to create powerful drum and bass sounds. But being fresh to the computer scene we have one or two questions:

❶ Can the song files be loaded directly from the SY77 to *On Stage* or would we need some intermediate software to convert the files to a language that the Falcon can read?

❷ Can the two programs be run simultaneously or can samples created on *Replay 16* be stored in *On Stage* and used later on?

❸ Presuming that the answers to the above questions are in the affirmative, is this setup the most viable option for the price, or is there a more cost-effective alternative, such as a dedicated sampler and MIDI file editor?

The obvious strength of the Falcon lies in its flexibility (for example, it can play games as well as run music programs) and the relatively small outlay. Bearing in mind our limited budget (we are relying on proceeds from our gigs) we would appreciate your advice on how best to spend it.

Jeff Davies, Buckingham

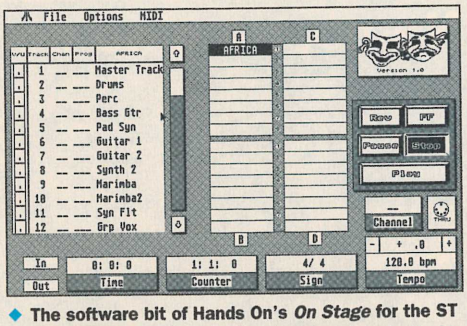
A Yes, the SY77 can only hold one song and the disks do take an agonisingly long time for live work – 30 seconds to load up. As regards the drum output, you can set up the drums to come out of any of the four outputs. Okay, you need to reconfigure the drum kit you are using and insert jack plugs (unconnected) in all the outputs just to get a separate output from one of them, but it can be done. If they sound weak, check the relative volumes of the multi-timbral (Performance) setup. In the factory-shipped state the other instruments are set up a little on the loud side, but if you pull these down the relative volume of the drums is good. If you don't like the sounds, you have a couple of choices. There are additional waveform cards with different drum kits (£49.95) and also various disks of sounds with different drum kits on them. Contact Jim Corbett or Dusty Miller at Yamaha (tel: 0908 366700) for details of their availability.

Regarding the rest of your queries: forget *On Stage* for the moment. Hands On is in the process of porting its software and hardware to the Falcon, but is waiting for Atari to iron out all the little bugs tucked away in the machine before anything is completed. If you want to check on Hands On's plans, you can reach the company on 0705 221162.

In the meantime you could try Gajits' *Breakthru*, a sequencer that earned itself a Platinum award with a *Future Music* rating of 90% in *FM* 5. This runs on the Falcon and enables you to play back samples recorded with Microdeal's Replay 16 cartridge. You can play your songs back out of your SY77 and into the sequencer, then edit them more easily and save them in a Standard MIDI File (SMF) format – the SY77 does not save in SMF format. *Breakthru* also has a handy 'juke box' mode which can load up and automatically play back songs in a pre-set order, with adjustable gaps between the songs. This may be suitable for your live work.

This would seem to be the most cost-effective way around the problem. MIDI file players will set you back at least £300, and with the cost of a quality dedicated sampler (second-hand about £700) added on, this option is probably not in the running. Our Jon Bates would add, however, that he uses an SY77 plus a sampler live and runs it from an Alesis Data Disk, and this has never let him down in over 150 gigs. What's more, we recently saw Moby (of *Go* fame – you know, that rave track with a chunk of *Twin Peaks* in it) perform live using only an SY77.

- **Alesis Data Disk £399, Sound Technology Tel: 0462 480000**
- ***Breakthru* £129.95, Gajits Tel 061 236 2515**
- **Replay 16 cartridge £129.95, Microdeal Tel: 0726 68020**



◆ The software bit of Hands On's *On Stage* for the ST (er, the bit that you don't take 'on stage', in fact). At the moment there's no version for the Atari Falcon.

known) has made some more. A board for the original DX7 costs $169; for the DX7II it's $199. Call Suz Howells on 0101 408 423 9361 (USA) to make your credit card order (expect to pay another $30 for shipping). It could be the resurrection your DX7's been gasping for.

❷ There is now a host of editors and librarians available for the PC, and your final choice will have to be based on the environment you want to run in (DOS, Windows or GEM) and whether you want to lay out your money on a complete generic editor-librarian such as DrT's *X-Or* (around £250) or just a relatively simple DOS-based editor-librarian (around £25).

Poke Systems, a UK-based software house, has a range of good and inexpensive PC-based software for Yamaha synthesizers. Contact Brian Heywood at Poke on 0727 51692 for more information. Alternatively, contact X-Ware Technology, which sells a large range of PC Music Systems, on 0706 Buyers' Guide later on in the Blue Notes.

❸ Yamaha did not originally supply a replacement backlit LCD for the DX7, but the newer DX7-II had a large two-line screen with backlighting to satisfy the moans of Mark I customers.

However, it's now quite possible to fit one of the newer backlit LCDs to the original DX7 thanks to a jolly useful and easy-to-install hardware upgrade that comes in at about £50.

Contact Yamaha-Kemble Music Service Division (tel: 0908 366700), which should be able to advise you on availability of the kit.

Arpeggiator answers

Q I'd like a simple arpeggiator to use live, MIDI'd to one of my keyboards. I realise that it may have to be second-hand, but any suggestions would be appreciated.

This problem remains unsolved despite many approaches to shops,

A Portable MIDI arpeggiators are pretty thin on the ground these days – as you'll no doubt appreciate, there is not a great deal of demand. However, Oberheim made a number of devices: there's the Cyclone (as used by 808 State on the track *Nimbus*) and the Strummer.

Both should offer the arpeggiating facilities you need, although the Strummer is an accompaniment machine used to recreate guitar-like playing effects via MIDI. Both devices are discontinued, but distributor MCM actually has some Strummers – tel: 081 963 0633 for details. As for the Cyclone, you'll just have to keep your eyes peeled.

As far as older MIDI arpeggiators go, it's extremely hard to find this type of thing, but certainly a Zyklus MIDI Performance System (designed and made in the UK) will do everything you need and bags more besides. Originally £2,000, it was an extremely powerful MIDI real-time sequencer/processor and won itself a band of avant garde aficionados who will never part with theirs. However, you might be able to find one for around £400 if someone is prepared to sell.

The early Sequential Circuits MIDI polysynths (such as the smallish SixTraks) had simple on-board arpeggiators and can probably be picked up for £150 second-hand and give you some extra sounds to boot. Scour the adverts in the music press and *FM's* reader ads section.

The CX5 is alive!

Q Being a beginner to 'future music', I would like some advice on improving my current music setup. I recently purchased a second-hand CX5 Yamaha music computer (with composer software, keyboard, the lot) for an extremely low price. Having sussed out how to use this ageing computer, I linked it up via MIDI to a cheapish Casio home keyboard to achieve some interesting, if poor-quality, results.

I find the program very easy to use, so I am interested in getting hold of a budget (perhaps second-hand) tone module. I have been looking at the TG100 from Yamaha – is this module compatible with the CX5, and how do you rate the TG100?

Also, being the greatest LFO fan around, I would like to know *What is House* exactly?

Tom Rath, Hampshire

A The CX5 was Yamaha's attempt to ram the Japanese MSX computer standard down the throats of musicians around the globe. However, the standard was pushed back into the world of games and the CX5 went down the pan, earning its place in history as the first failed musician's computer.

Despite all the limitations and its lack of modern-day features, the CX5 is something of a workhorse and sports MIDI Input/Output so you can connect any modern MIDI device to it, regardless of manufacturer, and control it via the CX5 software. However, be warned: old Yamaha sequence software is not the best in the world and you'll find that it doesn't support certain MIDI functions (such as storing System Exclusive data or

ported – or worse, might cause the sequencer to crash.

Some of the newer tone generators expect the use of MIDI Bank Change messages, so you should check that (i) the CX5 can support this or (ii) the tone generator will also work using conventional MIDI Program Changes. For further technical advice, call Yamaha, which still supports users but can offer no new software.

On a more positive note, the Yamaha TG100 should fit the bill perfectly if you need to expand your sound horizons on a low budget. Other alternatives include the Roland MT-32 (£200), the Kawai K4R (£300) and forthcoming tone modules that will be available soon from Kawai/Roland. Watch this space for details.

Oh, as for your PS, we asked Maff Evans for an answer. He said: "It's something that we're just putting the carpets in now." He's useless, that bloke.

- Kawai Tel: 0202 296629
- Roland Tel: 0252 816181
- Yamaha Tel: 0908 366700

What about the W-30?

Q I am a hardcore rave fan on a very, very, very tight budget. I have been searching high and low for a good, cheap sampling setup and I recently came across a Roland W-30 sampling workstation.

❶ Is the W-30 fairly simple to use?

❷ Is the W-30 a 16-bit machine, and at what rate does it sample?

❸ How many seconds of sampling do you get?

❹ I have heard that the W-30 has 8-note polyphony. If this is so, why does it have a 16-track sequencer?

❺ Does the W-30 have a good sample library available on disk?

Dan Gardner, Nottingham

A ❶ Unlike many competitors, the W-30 has a large 240 by 64 LCD screen, which means you don't have to page around the software nearly so much as on other systems. Also, according to Roland UK, there have been minimal enquiries regarding the operating system, which seems to back up Roland's straightforward user-interface philosophy.

❷ The W-30 is quoted ambiguously as a "16-bit processing" machine, which actually turns out to mean 16-bit internal processing with actual 12-bit front-end sampling, so it is not in fact a true 16-bit machine.

❸ It offers two sampling rates (15kHz and 30kHz), which translates to 40.4 seconds (split into two banks) at 30kHz and 80.8 seconds (in two banks) at 15kHz.

Roland offers no route to a bigger memory, but German company PA-Decoder has an expansion board which, when installed, gives up to 100 seconds of sampling, in addition to enhancing the sequencer memory. Unfortunately, there's no-one in this country currently authorised to do the installation, so you'll have to enquire to PA-Decoder direct, tel: 010 49521 2017690 or fax 010 49521 200288.

The W-30 can also be upgraded to use SCSI hard drives – that is, hard drives with standard Small Computer Systems Interface connections – but it requires a SCSI manage- from Digital Audio Concepts) and also some new software, which can be obtained from Roland without cost. Roland recommends that you call and check for a list of 'known-working' SCSI drives that will communicate happily with the W-30 before you rush out and buy that 500Mbyte hard drive of doom.

❹ As far as polyphony is concerned, the W-30 is quoted as 16-voice polyphonic with 16-track sequencer. However, there are catches (as with most synths and samplers), and full polyphony depends on the mode of operation. For example, if you start layering voices for a fatter sound you'll cut the polyphony down.

❺ The news on the sample library is very good. Roland UK has made a real effort to support Roland sampler owners, both in terms of backward-compatibility and volume of data. The W-30 can read from the older S50 and S550 (version 2) disks, and the S330, but not the S10, S220 or newer S750/770. Any S-Series owner can copy free-of-charge from Roland's library of four CD-ROMs for the pre-700-series samplers. Each CD-ROM contains 400 Mbytes of data – more than enough to ensure you find something you like.

The only catch is that you have to bring your own (preferably pre-formatted) disks, and book well in advance – Roland is currently booked up for a good two months for use of the copying facility. You can have one day's grab (10 am – 5.30 pm) at the CD-ROM and take your pick.

- Digital Audio Concepts Tel: 0784 462175
- Roland Tel: 0252 816181

Feedback

E's a pain! E's a pain!

In *FM* 5, David Sanderson wrote to tell of his troubles when setting up his Roland E-15 to enter GS Mode (Roland's own version of General MIDI – a standard which is supposed to make it simpler for instruments to talk to one another). Allen Brown of Cambridge adds: "I fear David will not have a great deal of joy persuading the keyboard into GS Mode. I have tried a variety of methods to achieve this: my E-15 is linked to a PC and I have been using the shareware MIDI utility *DUMP* with no success. I have been in contact with Roland, which says it's arranging an EPROM change which should result in future E-15s recognising the GS command sequence."

Cheaper MED

Also in *FM* 5, we told you that *MED* v3.21 for the Amiga was £10 from Amiganuts United (and we printed an incorrect phone number too). Ray Burt-Frost, ex of Amiganuts, called to say that the software is now available for a mere £1.25. Call Mark on 0703 470017 for more info.

He adds that *OctaMED Pro* version 5 should be ready by the summer. *Future Music* will keep you posted...

Filing live

Q I am 'one-half' of a semi-pro duo – I play keyboards and sing, my husband plays rhythm guitar and sings also. Our setup includes a Korg M1, a Roland D-70, a Yamaha RY30 and MIDIFiler. I loved the sounds on the RY30 but had to purchase the MIDIFiler so that I could use it live! However, the disks hold, on average, four songs (songs must be ten minutes long because there is a considerable gap on the repeat function). I now have 29 ▷▷

The ultimate question

Q I am a keyboard-playing singing guitarist with a percussion fetish. I am on a limited budget and can't afford to buy the wrong item. Here's a list of intended purchases:

Atari STE 1Mbyte (computer)
***Breakthru* (sequencer)**
Replay 16 (16-bit sampler)
***Band in a Box* (sometimes I feel lazy!)**
Korg M1 (second-hand synth)
Zoom 9001 (effects unit)
Roland CP-40 (pitch-to-MIDI)
CD player (for samples)
Cheetah pads (percussion trigger for sampler)

Do you think this list will work well? Is there anything vital I have missed out? Would it be better to use a cheaper sequencer – Microdeal's *Concerto* perhaps – and buy another module? Would it be better to buy a Roland S-10 or Akai S700 instead of *Replay 16*?

David Bowie [surely not – ed], Surrey

A This lot should work fine together. You seem to have the basics well covered. But you may also want to get a mixer to keep it all under control. Pop down to a friendly music shop and have a play with the Boss BX80 (£275) from Roland, the Mackie 1202 (£349) or the Soundcraft Spirit Folio (from £351.33 – reviewed in *FM* 6), all of which are excellent value.

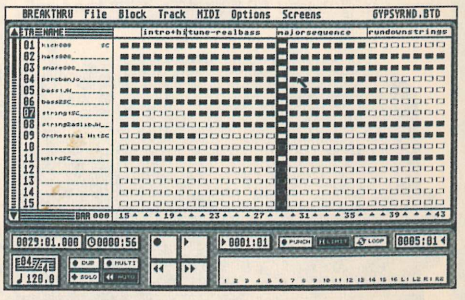
The Korg M1 is a particularly good choice in this context because it has a wide range of quality synth and drum sounds. But take a look at Invision's M1 Plus-1 ROM expander (reviewed in *FM* 4), which gives your M1 even more sounds to play with.

Breakthru is a very well-specified sequencer, but you may also want to look at *Prodigy* (£135) or Dr T's *Tiger Cub* (£99). These don't offer sample playback (although an STE version of *Prodigy* is in the pipeline), but take some time to play with each one anyway before deciding which one best suits your way of working. You'll be spending a lot of time with it, so it's worth taking your time to get this one right.

As for samplers, Replay 16 has a big drawback in that it only plays a maximum of four notes at once. Both the Roland and the Akai beat this easily and are slightly easier to handle too, but only offer 12-bit sampling – although in practice some people like the slightly more grungy sound this gives anyway. The best advice (as ever) is to have a listen and a play with the product before parting with your money.

The Cheetah situation is currently up in the air, as you will have read in the news pages in last month's *FM*. In any case, Cheetah's drum pad set has been discontinued (shame!) because the company couldn't find anyone to make the frame. You might still find some pads available, as well as a Pad-MIDI converter for £150, so if you can find some way of holding the pads up you should be okay. Or you may be able to get hold of a second-hand Roland Octapad for about £300 to £400. It has eight pads built in and will do the job with style to spare – it goes well with designer shades and black leather too.

- **M1 Plus-1 board £349 (plus fitting), Zone Distribution Tel: 071 738 5444**
- ***Prodigy* £135, The Digital Muse Tel: 071 828 9462**
- ***Tiger Cub* £99, Zone Distribution**



◆ Gajits' *Breakthru* – a great MIDI sequencer for the Atari ST and well worth a browse, Mr Bowie.

◆ **Opcode's EZ Music Starter Kit – an offering aimed at those wanting to get musical with the Apple Macintosh. It's just the ticket for beginners.**

Teenage Mac lad

Q I have been a fan of techno/rave music for some time now and I am looking to get started making it myself. I am a 14-year-old on a sadly limited budget, so please try to recommend cheap kit. I own a PSR-300 keyboard (which has MIDI In and Out, but no Thru) and have access to an Apple Mac Classic II. Since I can use the Yamaha as a controller, it seems I only need to buy a synth module, a MIDI interface for the Mac, cables and sequencer software. Can you recommend a module, an interface and a sequencer program? Also, could I integrate a sampler into this setup later?

Second, almost any setup I choose will result in a proliferation of audio Outs. Simply put, how do I reduce them to one 5-pin DIN-plug to connect to the back of my aged (1973) Philips amplifier?
Steff Davies, Cambridge

A Probably your most cost-effective option is to kill two birds with one stone and buy a Yamaha TG100, which can act as a simple MIDI interface for your Mac and provide you with a General MIDI tone module crammed full of sampled sounds, all for around £350. At present, the TG100 is unique in having this dual functionality, but there is a whole load of similar products due from Roland and Kawai, so you may want to wait and see if there is anything that either is cheaper or has better sounds.

Alternatively, there's a number of low-cost MIDI interfaces available for the Macintosh. Some of these are available as special packages, including a sequencer. One of the best around is the EZ Music Starter Kit from Opcode Systems Inc. This includes the MIDI Translator interface (one MIDI In, three Outs, self-powered from the Mac), the *EZ-Vision* sequencer (which is upgradable to the fully professional *Vision* or *Studio-Vision* software), PG Music's *Band in a Box* auto-accompaniment software, and the Opcode *Book Of MIDI* to boot, which is an excellent educational and interactive piece of stackware for HyperCard. This whole package costs around £215. (MacWarehouse offers next-day delivery – tel: 0800 181332.) Another option would be to buy a cheap MIDI interface such as the Altech Systems MIDI-Face LX (around £40) or Opcode's MIDI Translator (around £50, from MCM, tel: 081 963 0663) and then choose an alternative sequencer such as Passport's *MasterTracks Junior* (MCM again).

If you only need a basic one In, three Outs with no status indicators, you'd do well to go for the Opcode MIDI Translator since it is the basic industry standard. If you need more ports or more lights, then it means more money. You can easily integrate a sampler into this setup in the future, since you have three MIDI outputs from even the cheapest Mac interfaces and therefore your sampler will sit on one of these outputs for MIDI playback. However, if you eventually want to get into MIDI sample dumping and sample-editing on the Mac, then you will need a more sophisticated MIDI interface with at least two MIDI Ins – but why spend the extra money now if this is some way off for you?

To solve your multiple audio output problem, there is no alternative but to buy a small mixer. One of the cheapest around is the MIDIMan Minimixer (£89). Then you will need a stereo phono to 5-pin DIN cable and two phono-to-jack adaptors (both available from your local Tandy or electronic hobby shop) to connect the mixer into your ageing hi-fi, and away you go.

◆ **MIDIMan Minimixer £89, Zone Distribution Tel: 071 738 5444**
◆ **Yamaha Tel: 0908 366700**

disks and I work from an index system – you can imagine the hassle. Any other suggestions?
Linda Ward, Earls Barton, Northants

A The old data-management problem rears its ugly head again. How to cram a whole set on to one disk and be able to get to anything you want in under ten seconds?

To give a solution, we really need to know if you're using the MDF-1 or the newer MDF-2 data filer. Assuming you bought the data filer after the RY30, it should be the Yamaha MDF-2, which uses standard 720k 3.5-inch disks, rather than the MDF-1, which used mini-disks. Given that this is the case, by your own estimate each song must therefore use some 180k of disk space, which means either (i) you must be playing broken-time jazz with Manu Katché doing your rhythm programming, or more likely (ii) somehow you're not making the most efficient use of disk space.

It sounds like you're using the MDF-2 to store all your sequencer information – in other words, all the pattern data and note events for the RY30, as well as the keyboard data – rather than dumping Song data into the RY30 via System Exclusive and then syncing the RY30 to the MDF-1 via external clock. This would be slower and less convenient, because you would have to send a new System Exclusive dump before each song, but it would enable you to store far more songs on one disk. Unfortunately, there is often a trade-off between storage density and ease of access, which is exacerbated in your case because of the length of your songs.

D-10 commandments

Q After buying two soundcards for the Roland D-10, one from Roland and the other from Valhalla, in ad-

Pick up a pick-up

Q I've got an Amiga 500, a Yamaha keyboard, and all the gear for *Sequencer One Plus*. I'm happy with the setup but am not really into keyboards. A guitar-MIDI controller would be ideal, but I have not got a spare £899 for the Roland GR-1 you reviewed in *FM* 2. I was wondering if there are any other alternative MIDI-guitar pickups I could buy to trigger my system. Would the Casio DG20 work? And do they still make the DG20? I have not seen any new ones.
Paul Martin, Basingstoke

A There are actually several MIDI-guitar pickup systems still around, but beware – they vary considerably in their performance and functionality. If you can raise around £500, you could get a second-hand Roland GR-50/GK2 – it's a good, reliable system which includes a sound module to boot. Alternatively, Shadow manufactures a low-cost MIDI-guitar pickup, the SHO-75, sold now for around £300. The SHO-75 is probably the only available low-cost solution to making guitars speak MIDI. Though it is a basic system, it comes with a small key-pad for setup, including simple MIDI channel assignment. If you don't need on-board sounds or masses of flexibility, then this system may well appeal.

Casio itself has pulled out of the professional musical instrument world, so to get hold of Casio MIDI guitars you'll need to try second-hand instrument dealers or private ads like those in the back of *Future Music*. However, although Casios were well-priced and work quite adequately, we would recommend you at least investigate some alternatives before making your mind up.

Soho Soundhouse in Soho, London, has one of the better selections of MIDI guitars (including older and second-hand models), and has in the past sold the SynthAxe, Yamaha G10 and Stepp DG1, so it has built up some experience in guitar synth area. Call Stephen at Soho Soundhouse on 071 437 3195 and have a chat about the alternatives. A useful source of second-hand gear is the music section of the London-based buy-sell-exchange paper *Loot*, which is issued daily. *Loot* can be reached on 071 328 1771. There are similar local ad papers all over the country, some with very good music sections.

FM will, of course, continue to cover the latest MIDI products and developments, including those that are guitar-based, but if you want a regular dose of specialist MIDI guitar info and don't mind paying postage across the pond, you could subscribe to the US *MIDI Guitarist Magazine*.

For details, write to PO Box 75, Jacksonville, OR 97530, USA, or tel: 010 1 503 899 1948 (but watch that transatlantic-scale telephone bill).

◆ **The Stepp DG1 – a guitar-shaped synth trigger that featured active frets, on-board sounds and some pretty funky LEDs for fret markers. You'll have to look to the second-hand market to find one though.**

Raving, you're raving

Q Yo, *Future Music!* I want to create rave techno dance kinda stuff and don't know what sort of kit to buy. I've got a budget of £1,000, and I guess I need a sampler, sequencer and master keyboard. What can you suggest? PS Great mag!
Loadsa readers, Everywhere

A Yep, we're getting lots of this kind of question. Well, maybe without the 'Yo', but generally there's heaps of people want recommendations for how to start in the race to rave.

So here's a bunch of kit combinations for all you proto-techno people to consider, along with approximate prices.

(Alternatively, take a look at the letter headed 'What about the W-30?' for information about the sampling workstation used by The Prodigy, Bizarre Inc and others.)

Option A

◆ Casio FZ-10M sampler, @£525 second-hand:
A 3U, 16-bit sampler (though rumoured to be more like 13-bit!) with 2Mbytes basic memory, sampling frequency 9 to 36kHz variable, with maximum sample time of 58 secs at 9kHz, high-density 3.5-inch drive, advanced features (resonant filters), extensive library and a UK user group.

◆ Roland D20 synthesizer with 8-track sequencer, @£475 second-hand:
A 61-note keyboard, LA Sounds (that is, it uses Roland's Linear Arithmetic sound synthesis system), drums, FX, disk drive, eight voice tracks plus rhythm.

Option B

◆ Yamaha TX16W rackmount sampler, @£450 second-hand:
A 2U device, 12-bit sampling at 16, 33 or 50kHz, expandable up to 6Mbytes, double-density (not high-density) disk drive, 16-part multi-timbral, eight Outs plus stereo, no SCSI, not the easiest to use.

◆ Yamaha SY55 synthesizer with eight-track sequencer @£400 second-hand:
A 61-note keyboard, with AWM-II 16-bit sampled sounds and basic 8-track sequencer – no disk drive is the main disadvantage.

Option C

◆ Cheetah SX-16 rackmount sampler, £499 new:
1U, 16-bit stereo sampler, variable rates up to 48 kHz, 512k base memory with optional 2Mbyte expansion, high-density 3.5-inch disk drive (can read Akai S900, S950, S1000 disks) and eight individual Outs. Also offers sample-scrub function with mod-wheel.

◆ Yamaha V50 FM synthesizer with 8-track sequencer, @£375 second-hand:
61-note keyboard, 'four-operator' FM synthesis, with 12-bit sampled drums and a 3.5-inch disk drive for storing sounds or sequences.

Option D

◆ Ensoniq EPS sampling workstation with 8-track sequencer, @£950 second-hand:
61-note keyboard (with poly aftertouch), 16-bit samples, variable rate up to 52kHz, maximum sample time 41.7 seconds at 6.25kHz or 5 seconds at 52kHz, basic memory is 480k, 3.5-inch disk drive, optional SCSI interface.

dition to a ROM card and some sound disks from SoundSource, I found that my keyboard can't create the same impressions as the D-50.

When the D-10 does sound good, it's in dual mode, causing a loss in polyphony. Why is the D-10 so miserable when compared to the D-50, and which cards could you recommend for piano and Hammond sounds and also good synthesizer sounds that don't use dual mode?
Vitor Santos, Faro, Portugal

A Alas, if Roland could have made a multi-timbral D-50 for the price of the D-10, they would have taken over the world. A great many people flocked to the D-10 as the awesome D-50's baby brother, but just as the Yamaha DX11 was not in the same ball-park as the DX7 (even though the DX11 was multi-timbral), so the D-10 will always be overshadowed by the D-50 sound.

The D-50 wasn't multi-timbral, and it was inevitable that with the D-10's added multi-timbrality and reduced price, something had to go, and this was basically the complexity of the synthesis algorithms and part of the digital effects processor section (the chorus and equalisation were removed, and the reverb simplified). The difference in sound that you have noticed is directly because of these omissions.

To be fair, the D-10 does make close approximations to some of the classic D-50 sounds such as Sound-Track, and is closest when in Dual mode. But of course, you have to remember that even the D-50 sounded best when it was in eight-note polyphonic mode with a dual layer of sounds. You're really expecting way too much if you think that a D-10 running multiple single voices will sound exactly like several D-50s. If you really want 'those' sounds, as many musicians have realised, get a D-50, because nothing else – apart from the D-550 rack version – sounds exactly like it. Current second-hand D-50 prices in the UK are £350 to £500, depending on condition, RAM cards, and so on.

As far as getting hold of some decent

a good reputation for producing atmospheric synth textures, so perhaps you should check out the rest of its library for the D-10. Pro Music has some Sound Source cards – tel: 0284 765765. (Telephoning from Portugal, the country code for the UK is 44.)

Roland's own sound library covers your other areas of interest, although since there is no 'Roland Portugal' as far as we know, the complete library may not be easily available in sunny Faro.

However, Roland UK is always glad to help out, so if you have some detailed questions, call Roland UK on 0252 816181 and ask for Dave Marshall or Richard Langley.

Missed the boat?

If you missed something in *Future Music* that you're interested in – a review, maybe, or a helpful explanation of just what you wanted to know – turn to the *FM* back issues service on page 52.

The urge to merge

Q We currently have an Atari STE (with 4Mbytes of RAM) with Steinberg *Cubeat*, a Roland D-10 synth, a Boss Dr Rhythm DR-660 drum machine and a Yamaha SY22 synth. The MIDI cabling is as in your diagram in *FM* 4, using the Roland D-10 as the controller keyboard. In this way all the recording has to be played on the D-10, even the drum patterns. Is there a way of connecting this hardware together so we can play on the source instruments and record using *Cubeat*? Do we need any extra hardware?
Adam Stewart, Balsham, Cambs

A Sounds like you're in need of a MIDI merge box which can take the outputs of multiple MIDI devices and merge the data to a single output that your ST will swallow.

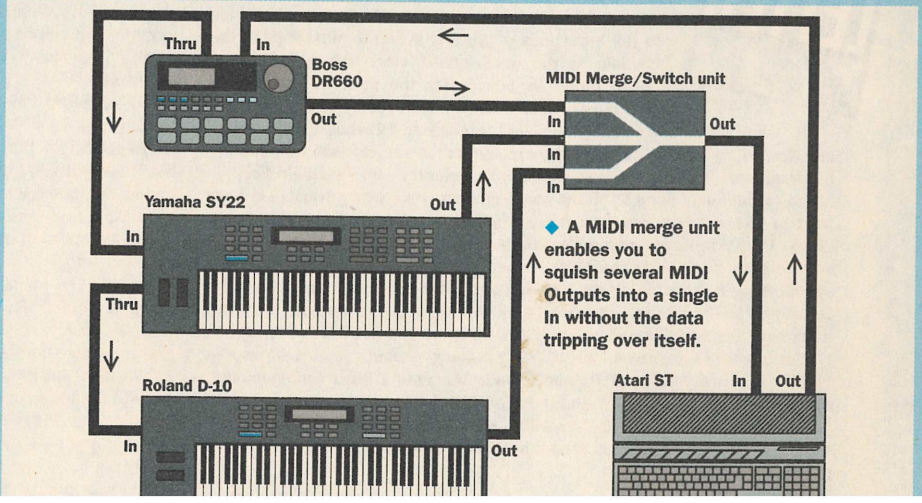
These are not cheap, because merging is a complex process and requires a reasonably powerful microprocessor to sort out the packets of two, three or more bytes in a single message. The Philip Rees 3M MIDI Merge Unit does the job for £99. Philip Rees makes a whole range of MIDI accessories, so get dialling.

A MIDI merge box enables you to play the keyboards and the drum machine at the same time, all channelled through one MIDI Out. And we're told that *Cubeat* can record up to four tracks of MIDI data simultaneously, so your setup should work quite nicely with it.

If the merge facility is not too important and you just want to save bother when connecting multiple Outs to one In, you could buy a three-way switch with which you can only play one instrument at time, but at least you don't have to keep re-wiring your kit over and over. Try the Philip Rees 3B MIDI Selector (£29.95), the 5S MIDI Selector (also £29.95), which gives you two spare inputs, or the future-SWITCH Turbo (£24 from Future History, tel: 0933 311865), which gives you one extra.

The diagram shows you how to set the box up. Turn all the Local controls Off on your instruments, with the soft MIDI Thru activated on *Cubeat*. This will stop any note-sticking hassles.

◆ Philip Rees 3M MIDI Merge Unit £99
Philip Rees Tel: 0608 811215



Howl round

If there's something you'd like to get off your chest, write to Karl Foster at Howl round, *Future Music*, 30 Monmouth Street, Bath, Avon BA1 2BW.

Demo delight

It was a brilliant idea to include a CD with issue 4, especially the reader demos. How about less sampling next time and more demo tracks? After hearing *Headstone* by Mesh, I would love to get hold of their demo tape. Have you got a contact address for them?

So far your magazine has been excellent – I especially liked the Meat Beat Manifesto feature in issue 2. However, I do have one gripe: whatever happened to the monthly newsletter that was promised to subscribers?

Neil Parr, Reading, Berks

You can get in touch with Mesh on 0272 671076 and I'm sure they'll be happy to give you details on how to get hold of their demo. I trust, by your gripe, that you're a subscriber, in which case you'll be getting a special bumper edition of the newsletter mailed to your door with this issue. Hope you enjoy it.

High speed noise

Just a quick suggestion or three for your buyers' guide: for all rackmounted gear, please state what height they are. Multi-trackers and portastudios: what speeds and noise reduction do they have? Otherwise, an excellent mag.

Dave Brockman, Rainton, Kent

There's an awful lot more that we could include in the buyers' guides if we had the space, but it's a job squeezing everything in as it is. I'll see if we can squish things up a bit further to get even more details in for future issues.

Manu-flannel

I enjoy your magazine – in fact it's hard to drag me away from reading and gazing at the high-tech equipment. You really muck in there when it comes to close-ups on musicians' gear. I also like the humour when you test the latest equipment and the no-nonsense talk *[okay, okay, our egos shall explode forthwithly. Now then, what have you to say, sir? – ed].*

It would be great to see more detailed information on the facilities of the equipment, like whether the controls make as much difference as the manufacturer boasts. Don't you just hate it when manufacturers boast that the latest piece of technology is "the ultimate". It's as if they are trying to brainwash the public into "buying my synth, or else".

At the end of the day, people don't want to be told what's good for them, they can decide for themselves.

Sequencing power doesn't run the show; it's the wide range of useful sounds that really matters. The pre-sets may be boring, but there's hidden power under the top panel if people are willing to programme those large RAMs.

Before I close this letter, is it at all possible that you could give me that gorgeous photo of the Roland Jupiter 8 [*FM* 5, page 29]? It's still a dream machine and I've always wanted a colour photo for myself. I can send cover for printing costs if needed.

Also, is there any chance that *FM* will ever become a glossy magazine? The colour seems to rub off on your fingers after a while.

Clive Gregson, North Prospect, Plymouth

We try to present as much useful info as we can in each review so you can make your own judgement about whether the product is right for you. I think it's a bit strong to suggest manufacturers are in the business of cynically brainwashing the public. It's more a case of them being jolly enthusiastic about their new bits of kit – the impression I get, just by talking to music equipment manufacturers in the course of putting *FM* together, is that they are peopled by real music enthusiasts. So it's hardly surprising that they get so excited when they come up with something new.

I'd agree with you that there's much reward to be had by delving beyond the pre-sets, and manufacturers do seem to be trying to make new synths that little bit more user-friendly – have you noticed how many knobs, sliders and jumbo-size LCDs are popping up on synths these days?

As for a re-prints service, administrative nightmares aside, there are all sorts of copyright wrangles I'd have to sort out with the

PRIZE LETTER

Wise up to intelligence

Further to your reply on home keyboard coverage [*FM* 5 prize letter], and in particular your idea of what 'intelligence keyboards' are useful for. Are you really trying to tell thousands of pro and semi-pro musicians in the 'middle of the road' scene who, like myself, have used these keyboards for the past 20 years, and have never been short of work, they're no good for what we've been using them for? Intelligence keyboards are extensively used by trios, duos and single musicians in social clubs, community centres, pubs, hotels, etc, up and down the country – so wise up man.

You would only need to phone some of the people who advertise in your mag to find out how many of these keyboards get sold to gigging musicians. They'd probably also make you aware of the huge number of synths sold to guys and gals in the MOR scene. There's a huge upsurge in youngsters taking lessons on single keyboards, caused by the introduction of intelligence keyboards in schools and by hearing the sounds both semi-pro and home keyboardists get out of them. So there is a need for coverage.

I'm about to purchase an 01/W FD Korg workstation [reviewed in *FM* 3], but will wait until Roland unveils the new E-86 before deciding. Meanwhile a review of the Yamaha PSR-SQ16 would be welcome.

Thanks for your write-ups on MIDI. Now I know there's more to MIDI than the facility to start and stop a separate knocking box from my intelligence keyboard.

W Findlay, Irvine, Ayrshire

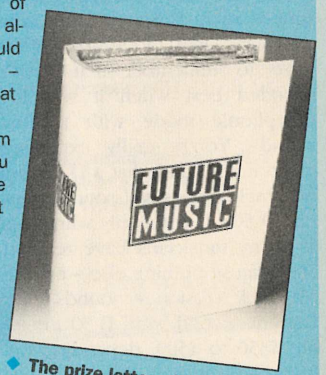
Methinks you interpreted my reply awry. I'm fully, nay painfully, aware of how 'intelligence keyboards' are used – I've spent a deal of time talking to Technics, Yamaha and Roland about this very subject of late. Perhaps it was unfair of me to dub them 'home keyboards', but the point about *FM's* remit remains. I'll explain.

The keyboards to which you refer are geared towards interpretation – that is, playing other people's songs and/or in other people's styles. And there's nowt wrong with that. However, the synths that *FM* majors on are geared more towards creativity – that is, tools with which composers write new material and establish new styles.

You'll appreciate that there is bound to be crossover – you could use either of these keyboard types in either area, although how easy or appropriate it would be depends on the specific keyboard – but it is the targeting of the devices that makes the difference.

Having said that, I am making room in *FM* for the kind of coverage that you and a number of other readers have asked for. You will notice that we've got Yamaha's new PSR5700 on test in this issue – heck, we've even got one to give away as a competition prize.

I'll also let you into a another secret: Roland's new E-86, Farfisa's new F1 and Technics' new KN2000 are all in the pipeline. As for the PSR-SQ16, I'll have a word with Yamaha. Is that wise enough for ya?



◆ The prize letter wins a binder worth £5.95. Turn to page 52 to order yours – or

Rave crave

Having owned a Yamaha PSS-790 keyboard for about a year I have decided to move on and get some new musical equipment. Having seen how useful an Atari STE can be for composing music and having heard all the stories and tech specs for the new Falcon030, I am fairly certain of getting one later this year.

However, I am now finding the PSS-790's vector synthesizer and 100 presets a bit boring and incapable of getting good, happening rave noises of the gritty/analogue/meaty/chunky bass variety, as well as acid-type sounds.

Having read interviews with The Prodigy's Liam Howlett and Bizarre Inc, I get the impression that I should get an old analogue synth together with a Roland TB/TR-series acid box for drum sounds, etc. Everyone else seems to know about these things apart from me, so could you give me an idea of what synth I should look for? I am particularly interested in the Roland Juno and Jupiter ranges that I hear bits and pieces about. Whichever you recommend, it would have to have MIDI compatibility.

Rather than looking at a single machine in each Retro review, maybe you could extend it and give us a rundown on a full range of old machines – the Roland Junos, perhaps?

Duncan Coutts, Lerwick, Shetland

There's a number of ways you could get the sounds you want. You could give E-mu's wonderful Vintage Keys tone module (scored a deserved 85% in *FM* 6) for classic synth sounds with MIDI control. Or buy a sampler and some sample CDs of analogue synth and drum machine hits. Then again, if you really, really want the genuine article, and can haggle a good deal on one of these fast-appreciating classic keyboards, check with Kenton Electronics (Tel: 081 974 2475) about the availability of MIDI retro-fits or MIDI-to-CV (control voltage) converters.

As for which synth to go for, the best way to choose is to get a hands-on demo at the nearest dealer that stocks used kit. I realise that's a bit of a hassle if you're living in the Shetlands, so bear with *FM* as we continue to track down retro gear and give you the information you need. However, I'm a little averse to doing whole ranges of keyboards in the context of the regular column. How about a special feature or two a little later in the year? Now there's an idea...

Oh, and I've clipped the queries you had about patch editors and computer-based samplers from your letter and passed them on to our *FM* Interface panel. Look out for the definitive answer in a Blue Notes section near you soon.

◆ **The 90s' craze for big, fat analogue synth sounds prompted E-mu to stuff a whole load of noises from classic synths and samplers into the Vintage Keys tone module (strange, there's not a key in sight).**

talented bunch of photographers we use before anything could be put in place, but I'll look into it. Or you could try calling Roland direct (Tel: 0252 816181) and asking if there are any pics available.

And no, I don't fancy *FM* going glossy throughout. I rather like the paper as it is.

Synth showdown

Will there be a test in your magazine on great synthesizers, or a comparison between the Yamaha SY99 and the Kurzweil K2000? I'm very interested in what you guys have to say about them.

M Soekmlal, Delft, Holland

You'll notice we've tracked down the Kurzweil K2000R, the rackmount version of the K2000 keyboard, for review in this very issue of *FM*. However, a head-to-head test on synthesizers is still very much on the cards. Stay tuned.

Porta-MIDI

Concerning hardware sequencers, I use an Amiga at home and an Atari at school and will need to use a workstation or hardware sequencer to transport MIDI data around. Could you please include them in your buyers' guides? Speaking of which, could you put the percentage you give any item reviewed in the guides. It's infuriating when deciding whether to buy 'a' or 'b' workstation when neither remark has any clue as to which is better.

Would you be interested in receiving my compositions? I've no idea how they compare to the demos reviewed and am not sure how good mine would have to be to be worth the postage.

N Minogue, Reading, Berks

Er, workstations are already in the buyers' guide, under keyboard synthesizers. There ain't much in the way of hardware sequencers to be had these days – computer-based ones are usually more powerful and flexible. Percentages are a bit of a nightmare, as they're totally subjective and don't allow for comparison (cue backlash from manufacturer about to launch powerful, easy-to-use, cost-effective hardware sequencer).

I have considered putting in ratings, but, lack of space aside, I don't think it would be terribly useful because a rating has a finite life. New products are appearing all the time and last year's Platinum-winning workstation may be only this year's 60-70% rated machine, what with continuing technological advances against price.

Sure we'd be interested in listening to your compositions. Send 'em in.

Noise annoys

Thank you for a useful music magazine – which has been a long time coming to us. Four-track types like me are being driven mad by noisy effects, so I wonder if your reviewers could tell us how noisy they find certain effects. What the makers quote means beans to us.

Having bought a 4-track on your recommendation, could you recommend a good microphone, bearing in mind that the 4-track cost under £400? Would an expensive mic 'sound' expensive on a cheap 4-track?

James Cameron, Leicester

In the context of a review, it's difficult to quantify noise beyond either giving quoted figures or baldly stating that the device is noisy or quiet. The amount of noise varies depending on which effect you're using and how it's set up, which also serves to muddy the water. As a rule of thumb, the more you pay for an effects processor, the quieter it tends to be. However, I'm planning to run a feature fairly soon which should be right up your street, so stay tuned.

A good mic can always make a difference, even if your portastudio is of the budget variety. I'd suggest you get down to your local dealer and try a few out.

You'll find that the best judges of a mic's sound are situated on either side of your head, not in your wallet. Go for the one that splashing out huge wonga on the principle that more money means sassier sound.

Un-racked rapper

I am a rap artist and have had seven singles released to date, the most successful being *The Band Played The Boogie* by NW1 featuring Born 2 B on Coldcut's Ninja Tunes Records last year. It was on the A playlist for Kiss FM, was regularly featured on Pete Tong's show on Radio 1 and was a regular on MTV.

Now, after collecting my hard-earned royalties, I am building an 8-track demo studio. The main piece of equipment I need is, of course, a sampler. The problem is that I often see articles on rackmount samplers, but I would like to see more on keyboard samplers and was wondering if you could do a head-to-head feature on keyboard samplers.

I am very interested in the Emax II keyboard and would like to know if I could use this in place of a workstation for my setup.

Born 2 B, Charlton, London

Judging from your airplay, you seem to be doing rather well at this rapping lark, Mr 2 B. So you want a head-to-head on keyboard samplers? I'll lob that suggestion in the direction of our reviews editor Maff and see what he can sort for you.

E-mu's Emax II is a very popular sampler among the dance fraternity – most users will cite the 'character' of its sound as the reason they use it. What they're getting at is that it doesn't reproduce samples with the clarity of better-specified samplers, but it's all the more musical for it.

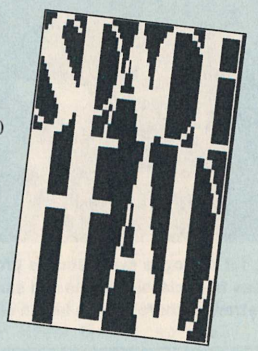
The Emax II's on-board sequencer is really more of a 'notepad' – great for sketching out ideas or recording motifs, but for real sequencing power you'd be better off buying a computer and dedicated sequencing software.

Take a look at the roundup of computer

Opportunity knocks

The *Future Music* demo sack is getting pretty full these days, giving Maff Evans the enormous task of descending once more into its considerable depths armed only with a torch, a Walkman and a brief to report back on this month's choicest entries.

Spacehead



Equipment used:
Sounds: Akai S950, Yamaha RX7, YS200 and TG55, Roland SH-1000.
Recording: Alesis Microverb 3, Yamaha MT3X
Sequencing: Atari ST running *Cubase*

Seeing as Spacehead cite their influences as ambient dance bands such as The Orb, it's not really surprising that this eight-track demo is set very firmly in the world of the chill-out. The evidence of this hits you straight away in *Metaphobe*, with its solid bass and percussive loop from LFO's *We're Back*. The feel of the track is reminiscent of the Aphex Twin, with similar sounds and percussion patterns being used.

7 and Counting continues this feel, starting off with some weird radio sweeps and distant-sounding Arabic samples. Even though the melody line is very staccato, the droning basses give the track a very moody atmosphere, which, although very soothing, is a little empty at times. The similarities to the Aphex Twin are carried through the third track, *Ebe*, which builds up from a dubby intro into a swirling, trippy dance-track (complete with Depeche Mode-style vocal "aaahs").

Although the fourth track, *Area 51*, starts off very dubby (with a bassline in the style of Jah Wobble), some dark-sounding chords and industrial noises give it a very ominous atmosphere. The rather odd vocals and samples also add to the tense atmosphere, making *Area 51* quite interesting. This doomy mood is lifted a little with *Anemone*, but this is a rather bland house track which is built around a funky drum pattern and a sample from Consolidated's *Praxis*.

Dawn, Sea of Tranquility, is where Spacehead's Orb influence starts to really get more noticeable. This track starts off with a few seascape and whale samples, then a very ethnic beat leads into a straight, funky drum riff and dub bass.

Then this is followed by an untitled track which could easily be something taken from the *U F Orb* album, despite the pretty uninteresting intro and the 808 State-sounding chords at the end.

The tape finishes with *Encounter No.1*, which is pretty much the most ambient one on the whole tape. The intro starts off with the normal vocal wail samples over a few droning keyboards (which is the usual form for the start of ambient tracks), followed by a laid-back trance-dance track built around the same loop that was used on Madonna's *Justify My Love* (which, for trivia fans, is a loop taken from one of Time + Space's Zero-G Datafiles).

Although it's all very well produced and features some nice, trance-like dance tracks, Spacehead's demo is a little uninteresting in places. Some of the loops and melodies are just a bit to clichéd to work properly on a demo, just prompting the old "oh, I've heard all that before" response – which isn't really what you want from people listening to your demo, is it? Spacehead have some great ideas for producing ambient tracks, but they should stop trying to be just like their musical idols and come up with some more of their own ideas, since these are the ones that really stand out on the tape.

Contact: Ian Fears on 0323 732914

Demo of the month
Biomechanoid

Equipment used:
Sounds: Ensoniq ESP16 Plus, Roland SH-09, Yamaha TG55
Also various "borrowed bits and pieces".

With a name like Biomechanoid and a cassette entitled *Cyberchrist*, there are a few conclusions that could be leapt to about this band. Usually those dabbling with the ideas of Cyberpunk and biomechanics are interested in harsh, aggressive industrial noise, especially when the cover features stark, modern lettering and a picture of a semi-constructed android. To tell the truth, that's what I expected to hear on playing this tape. What emerged though, was something very different.

The first track on the demo, *On-Line*, is a kind of "boot-up" into the world of Biomechanoid. With Cyberpunk samples laid over a heartbeat, you start to get a general technological feel about what is about to appear on the tape.

However, when things get started properly with *Nothing but Dreaming*, a very different picture

track turns into a trippy dance number with some very nice chord patterns and basslines. The female vocal sample is a little too high in the mix, obliterating some of the music in places, but it's still a promising start.

Next is the title track of the tape, which does have a semi-industrial feel at times, it has to be said. For the most part though, *Cyberchrist* is a solid dance track with some nice pings and bleeps used for melody. Some passages could even be film soundtrack music. After another track of film samples, *Bio-evolution*, we have *Metamorphosis* – a three-part song which puts some very Depeche Mode-style filtered basses over a laid-back TR-808 rhythm. Later parts of the trilogy have some strong dub bass elements and strong chord changes, which stop this long piece from becoming boring.

Reality or Illusion is one of the strongest tracks on the demo, with a good club beat, a solid bassline, nice chord changes and very subtle use of samples. It's a brilliant ambient dance track. This leads into the closing track of the side, *The Shadow Eater*, which has some swirling bass notes and synth sweeps, littered with background noise and samples (the "that is the end of this side" sample at the end is excellently placed).

Messiah? opens the second side with more radio noise and Cyberpunk samples, before moving into the second track, which is pretty much a straight hammering industrial piece. Although the bass and drums are fast with a lot of noise going on, this is one of the weaker songs on the tape. It doesn't have as many interesting passages as most of Biomechanoid's other stuff.

Next is *The Ladder*, which for my money is the best demo track I've heard all month (nay, all year).

use of samples spot-on. The superb flute and chord patterns are brilliant, giving the track a wonderfully emotive feel. Probably the most atmospheric dance track ever made.

After some more Cyberpunk samples, *Laughing Dub Thing* shows Biomechanoid's attempt at heavy dub. The vocal-sample melody over the bass and drums sounds a little bit like Finitribe, but the laid-back rhythms that eventually appear with the string chords make it sound a bit more individual. The way certain sounds fade in and out of the mix keeps things interesting too. There seems to be quite a lot of Cabaret Voltaire influence on *Dreamweaver*, since the track as a whole is rather reminiscent of John Robie's remix of CV's *Yashar*, especially in the way that the vocal effects are used.

The tape eventually finishes with *Neural Drift*, which builds from a moody synth intro into a booming reverb-soaked dub track over a very danceable rhythm. The atmosphere builds all the way through, but it still manages to sound rather relaxing. A good way to end a tape.

Cyberchrist has to be the most promising demo we've ever received here at *Future Music*. Although all of its elements have roots in existing music forms (like dance, ambient, dub and industrial), Biomechanoid have given all their tracks a very individual atmosphere.

Apart from the few niggles about certain areas of the mix that we've mentioned, *Cyberchrist* could easily be pressed up and released as a full album. If I didn't already have this tape, I'd certainly buy it. It's the most original and atmospheric dance music demo I've heard. A stormer. Is that enough superlatives? They're all well deserved.

Contact: Colin Fraser, Top Floor, 285 Union Street,

Nova State Conspiracy

Equipment Used:
Sounds: Boss DR-550, Yamaha TG100 and Portasound, Cheetah MS6.
Sequencing: Yamaha QY10.
Recording: Fostex X-26.

Nova State Conspiracy's demo tape cover gives the impression that they are quite a harsh-sounding techno band, seeing as it features a grainy stills picture from the film *Paris, Texas*, a drawing of a UFO and their own graffiti-style logo over the silhouette of a handgun. It's all in crude black-and-white and actually looks quite punk-like. Another clue to what to expect is that they cite their main influences as Nitzer Ebb, Frontline Assembly and Die Krupps.

On playing the tape, this assumption proves to be well founded, since right from the off we've got pounding rhythms and seriously slamming basslines (much like the bands mentioned above).

The tape starts with *Definitive Item*, which kicks off with an intro very much like the earlier material from Frontline Assembly, complete with a rapid-fire bassline and solid kick-drum pattern following the usual drones and vocal samples. Although the music carries on in this style (actually becoming more like FLA when the string chords come in), the vocals sound more like Depeche Mode, which is unfortunate in this case, because they sound weak compared with the heavy backing.

Another one of their influences has had quite a hand in shaping the sound of *Life in the Basement*. The intro again comprises the expected vocal samples over a synth drone, but this is followed by a bass and drum sequence which is more akin to something found on Nitzer Ebb's album *Belief*. The vocal performance works a lot better on this track than the first, blending well with the bassline and atmospheric chords to produce some nice shifting tones. The careful mix helps all the sounds to balance well, creating a very moody piece indeed.

The tape closes with *Schizoid Voidoid*, which is pretty much a combination of the styles of the first two tracks, blending elements of both Nitzer Ebb and Frontline Assembly. The percussive intro is a little weak, it has to be said, but once the rest of the instruments kick in, it takes off a little more. The sampled vocals and siren wails are worked into the mix effectively, which is more than can be said of the vocals, which are a bit sketchy in places. This isn't a fault of the performance, it's just that the overall mix and use of effects make the voice get a bit lost sometimes. The beat does work well on the track, but a bit more variation later in the song would help to keep things sounding interesting.

Nova State Conspiracy do have some good ideas to work into their songs, but a lot of the stuff unfortunately works a little song structure is nothing that hasn't been heard in this style before. Some fresh elements need to be woven into the stuff on this demo to make it really stand out. After all, Frontline Assembly and Skinny Puppy have embraced all sorts of elements into their sound to keep it lively. A promising demo none the less, but still needs a tad more originality.

Contact: Alex Novak on 0604 711834

Vital Sign

Equipment used:
Sounds: Korg M1 and Wavestation, Roland R-8, various guitars.
Sequencing: Atari Mega-ST running *Cubase*, with Timelock SMPTE sync.
Recording: Zoom 9001, Alesis Microverb/Limiter, Allen & Heath CMC 16 mixer into Fostex M80.

Taking a step away from the trance-dance and industrial techno which seemed to flood into the *Future Music* demo sack this month, we have a demo from Vital Sign, who produce some very impressive-sounding, soulful ballads. The four-track tape comes packaged inside a rather nicely-designed cover, even if the band's logo is a little bland. But then again you can't have everything, can you?

Vital Sign's music itself is extremely well produced, the tape featuring four finely crafted ballads. The first track, called *Broken Vow*, sounds like a cross between Sade and Prefab Sprout. The rhythm and performance are in the style of Sade mixed with some melodies and chord sequences reminiscent of the Sprouts.

The execution is pretty much faultless, with the arrangement and mix balancing each of the elements perfectly. The saxophone line is especially good, with some subtle effects and mixing helping to add just the right amount of feel to the soulful vocal performance.

Vital Sign's second track is *Dreamtime*, which has more of a funky feel than *Broken Vow*, mainly because of the more flowing rhythm which pushes everything along nicely. The Prefab Sprout influence is still evident, however, with the chords and the vocal performance capturing some of the more laid-back of Paddy Macaloon's numbers. The song's chorus is especially strong, having a separate enough feel and a good hook to keep you humming it for a while after hearing it.

Side two starts off with *48 Hours*, which has a very dreamy chord sequence as an intro, but loses some feel when the sketchy guitar part starts up. It does pick up a little when the track starts properly, but the chorus doesn't have quite enough of a hook to stand out on its own. It's still well produced and recorded, but not really as strong as either of the tracks on the first side.

The band have left the most simple song, *The Last Dance*, until the end, which may be a bit of a mistake. The track is a straight piano and vocal performance, very like one of the ballads to be found on a Tears for Fears album. It's alright, but all a bit too clichéd. It is a bit of a let-down as the last track on a tape; something a bit stronger may have been a better.

Despite a few weak points on the second side of the demo, Vital Sign show that they have some good songwriting and production skills. It's also nice to hear something which moves away from the usual Depeche Mode or techno-type demos that are frequently appearing.

Contact: Justin Birt on 0883 717834

Glasshouse

Equipment Used:
Sounds: Akai S950, Roland D-50, Kawai K1 and K4, EVS-1.
Sequencing: Atari ST running *Cubase*.
Recording: AKG D80, Mackie 1604 into Fostex R8.

The cover of Glasshouse's demo doesn't really give any hints as to what kind of music is to be expected, since the artwork is rather strange to say the least. What is actually on the tape is a collection of six tracks which sit somewhere in style between New Order and Gary Numan.

The opening track, titled *Innocent People*, starts off with a very strange reverse-reverb voice, before a very moody chord sequence leads into an atmospheric melody with a New Order-style bass and rhythm pattern underneath. Geoff Pinckney's vocal is slightly reminiscent of Gary Numan's style of delivery, but the backing makes the whole track sound a little different. The song's chorus is especially good, with some great chord changes backing up a very strong vocal performance. The break is pretty impressive too, featuring a strong dance beat. To finish, the track belts out some ▶▶

Take a tip or two

If you think you've got a demo worth sending out but would like some constructive advice before the record companies get their hands on it, then why not submit it to us for review in *Future Music*? Just fill in the details on the form and send it to the address shown.

We try and listen to all the tapes we get, but unfortunately we can't review them all in the mag – we only have enough room to cover a small fraction of the tapes we get. Be patient and send in more stuff when you tape it. We might not have managed to fit in a review first time around. But that doesn't

One thing we must point out is that we just can't send back all the tapes (we'd be here forever sticking things in envelopes if we did), so don't send any envelopes or Jiffy bags. Just make sure that you don't send us the only copy!

A few general hints:

1. Make sure your tape is safe! Package it properly to prevent damage, but don't surround it in tape and staples – we have to open it this end, remember.
2. Put some kind of inlay with your tape. Not only does it give us something to illustrate your review, but a good inlay catches the eye of the A&R execs.

seriously moody chords, giving the close a particularly dark feel.

Secret Life doesn't really have the same impact as the first track, since it has a bit more of a clichéd LA sound. Some sections even recall memories of the songs from the film *Flashdance*. The verse is okay, but this is let down by an unfortunately weak chorus without much of a hook. A bit of a shame, really. The last track on the side *Dead or Alive* is a lot better. The pulsing bass intro is quite powerful and the rhythm has a strong Depeche Mode feel. The chorus stands out well, with a very catchy melody, and the techno-based middle eight breaks things up nicely. The only criticism is that the vocal sounds as though it has got a bit too much reverb where something a little more subtle would have been better.

Side two starts off a little disappointingly, with the intro to *Take Me Away* being very unexciting. Just a 4/4 kick drum and a single synth line followed by a straight, steady bass sequence. Hardly the most interesting opening to a demo ever. It does get better once the track gets started properly (again the New Order influence is apparent), but the verse never really takes off. The chorus is a bit more interesting, but the break lets things down again with just a few empty-sounding sequences.

Save It is a pretty basic pop song, with a New Order-style intro, a fairly bland verse and a chorus desperately in need of a hook. The thin, lightweight instrumental break doesn't help matters that much either. *Dreams to Reality*, the closing track, picks up the pace a bit more, but still has quite an empty feel at times. The bass and some of the chords are nice, but the weak chorus and incredibly naff orchestra let things down quite a lot.

Glasshouse's demo gets off to a very good start, with the tracks on the first side having good production, nice hooks and rather emotive construction. However, none of the songs on the B-side are anywhere near as good as those found on the opening side. It might be a better idea just to circulate a demo containing the first three tracks, and work on the second three a bit more before submitting them separately.

Contact: Geoff Pinckney on 0279 450972

Infinity

Equipment Used:
Sounds: Roland W-30 and U20, Boss Dr-550.
Recording: Yamaha MT3X, Alesis Midiverb III.

Infinity are quite a difficult band to categorise really. The influence list of "myself and my friends" doesn't help much either. If anything, Infinity would have to be classed as indie dance crossover material with an element of noise trash and industrial. Oh no, that doesn't work, does it? How about rave indie-pop with metal overtones? No, that's not it either. Bah! Let's just go through the tracks on the tape and maybe that will help to explain what they're like.

The first track, *Epilogue* (which is a strange enough name for an opener) starts off with some classical strings before launching into a heavy rave sequence backed up with a heavy beat. Before the thing gets going, a booming jet sound ends the track, proclaiming the piece as more of an intro than an actual track. The first REAL track is *Living Hell*, which owes a lot to Depeche Mode for the bass and drum pattern style. The vocal performance is a bit more individual, owing something to the more musical vocal performances of Controlled Bleeding (not the sore throat pieces, mind you). The chorus features some nice chord changes, and the ending has quite a lively rave feel to finish on a high note.

Summer Storm has the same Controlled Bleeding-style vocal, this time over an early eighties melody line. The bass is quite powerful, but the chorus is a little dull and lets things down. *The Dreamtime* is a bit more good though, with some excellent chord changes creating a very strong atmosphere. The only real problem is that the hi-hats seems to be far too high in the mix, making the drum pattern sound rather messy at times.

On the second side of the tape, it starts off with a track called *Star Fighter* (sounds a bit dodgy). This begins with a jet-engine sample that, would you believe it, plays the same track as *Epilogue* on side one. Admittedly, some more drums and chords come in later, but it turns back into *Epilogue* after a while, then repeats the whole thing. Lose this one off the tape, I think, because it just smacks of laziness.

Omskia 6 is pretty much a straight rave track, using the "I feel it" sample as used by Moby on *Next is the E* and the wail that has also been used by Biomechanoid on their *Cyberchrist* demo. The string sounds are good, but the beat gets a bit repetitive after a while, since there aren't really any significant changes to keep the pace up.

The last few tracks on the tape continue the rave-dance vein, adding a bit more of a hip-hop element to the proceedings. The drums and basslines are very funky, but the rapid-fire samples get a bit tedious after a while and the whole thing seems to drag on for too long.

This tape seems to suffer from the same problem as Glasshouse's demo. The first side sounds good, but the second side just sounds like a collection of filler tracks. Again, the same advice applies. Just send off a tape of the first set of songs and work on the second set a bit more before submitting them separately. Otherwise, they'll only be taken as marks against you.

Contact: Dave Block on 0634 882676 (day), 0634 855944 (evening) FM

Gigs to get out and go to

Curious about the bands in *Future Music*? Looking for something just a little bit different? These are the gigs *FM* readers sent us details of this month:

Mesh: Techno pop/dance. Thursday 29 April, Flag HQ Club, Camden, London. Contact Mark, Tel: 0272 671067.

BFEF, Maschine Manitou, Automated Groove Machine: Techno/Dance/Industrial. 15 May, Mauretania, Park Street, Bristol. Contact Gary Stadden 0272 631492 / 535242.

That's all the gig news we've received this month. Why not get your up coming gig a free plug by filling in the details on the form and sending it to us at **Gig Listings**, Future Music, 30 Monmouth Street, Bath BA1 2BW.

Hot bands – take note!

If you're in a band that is getting interest from labels, promotion agencies or managers, get yourself some publicity by letting us know. Send us a short biography of the band (about 800 words), along with a list of tips which have helped you get where you are today. Bung it in an envelope along with a photo and send it to: Breakers, *Future Music*,

GET OUT AND GET INTO IT

Send dates & demos

Don't just sit there, get out and play! We at *Future Music* believe that some of the most exciting music happens live, so here's a chance to get others excited about what you're doing. In every issue of *Future Music* we carry details of gigs of interest on the music technology side of things. We also review your demo tapes and offer constructive advice about improving your sound. All we need are your details so that we can give you some free publicity.

◆ To allow for the lead time in printing this magazine, please give us plenty of notice of live performances – we need details *now* of gigs taking place after the middle of **May 1993**. Cut out this form, or photocopy it, and send it to:

Gigs and demos, *Future Music*, 30 Monmouth Street, Bath, Avon BA1 2BW

Gig dates

Band name.....

Musical style .....

Dates.....

Location.....

Ticket price.....

Tickets available from .....

Reason why someone should want to see you (no more than 20 words, please).....

.....

.....

Demo tapes

Band name.....

Equipment used.....

.....

.....

Musical influences .....

Contact name.....

Address .....

.....

.....Postcode .....

Phone number .....

Tick here if you don't want your contact address or phone number printed ❑

Main aim for the band.....

Buyers' Guides

New music equipment or software can be a big investment, so make sure you make the right choice – check the *Future Music* Buyers' Guides first.

Whether you're looking for an entry-level sequencer program or a top-of-the-range digital piano, you want to make the right choice. But how can you find out what's available, what it does, and where to get more info to make sure it's right for you?

The *Future Music* Buyers' Guide is your answer. It covers all the main categories of music technology, including instruments, recording, effects and software, with details on the products' specifications and prices. All you have to do is locate the category you're interested in, find the items that look most promising, and use the list below to contact the suppliers for full details before you buy.

Hardware is listed first, then software. Products are listed alphabetically within categories. Software categories are set out on page 81; these are the hardware categories:

- Controllers
- Effects, digital
- Home keyboards – standard keys
- Home keyboards – small keys
- Keyboard synthesizers
- Percussion, electronic
- Pianos, digital
- Recorders, multi-track
- Recording, digital
- Samplers
- Sound modules.

There's a brief explanation of what each category includes next to its heading. If you can't find a particular item where you expect it, check also in any related categories.

The details included are fairly self-explanatory, but these are a few of the abbreviations you might be puzzling over:

- MROS-compatible – Indicates that a particular program works with the MROS multi-tasking system in *Cubase*, often regarded as the industry-standard sequencing program
- Multit – Multi-timbral capability, or how many *different* sounds a synth can play at once (usually on separate MIDI channels). Not to be confused with polyphony
- Polyph – Polyphony, or how many notes an instrument can play at once, *either* as separate sounds *or* as chords of one sound
- Simult effects – How many effects you can use at one time within a single unit.

Future updates

These guides are updated for every issue with the latest information we can track down and verify, to keep the *Future Music* Buyers' Guide a reference resource you can rely on. Read on and make your buying decision an informed one.

Send us info!

These Buyers' Guides are compiled from information passed to us by manufacturers, developers and suppliers. If your company has got something you want the world to know about, just send all the pertinent information (including retail price, VAT inclusive) to: **Buyers' Guides, *Future Music*, 30 Monmouth Street, Bath, Avon BA1 2BW. (Fax 0225 446019.)** All the information listed here is believed correct at press-time. If you know of any changes, send the correct details to the above address on headed paper and we'll update the guides in the next possible issue.

Contacts

How to contact the suppliers of items listed in this guide

Akai: Haslemere Heathrow Estate, Silver Jubilee Way, Parkway, Hounslow, Middx TW4 6NQ. Tel: 081 897 6388
AMG: PO Box 67, Farnham, Surrey GU9 8YR. Tel: 0252 717333
Amp Sound: 153a Victoria St, St Albans, Herts AL1 3TA. Tel: 0727 50075
Arbiter: Wilberforce Road, London NW9 6AX. Tel: 081 202 1199
Atlantic Audio: 2 Manor Gardens, London N7 6JY. Tel: 071 272 8944 Ext. 248
Bit by Bit: 37 Roman Wharf, Carholme Road, Lincoln LN1 1SN. Tel: 0522 533461
Bluebridge: 3–5 Fourth Ave, Halstead, Essex CO9 2SY. Tel: 0787 475325
Blue Ribbon SoundWorks: Venture Center, 1605 Chantilly Drive NE, Suite 200, Atlanta, GA, USA. Tel: 0101 404 315 0212
Casio: Unit 6, 1000 North Circular Rd, London NW2 7JD. Tel: 081 450 9131
Cheetah: Cheetah House, Bedwas Businesss Park, Bedwas, Gwent NP1 8DU. Tel: 0222 867777
Composers Desktop Project (CDP): 11 Kilburn Road, York YO1 4DF. Tel: 0904 623696, 0904 613299
Composit Software: 10 Leasowe Green, Lightmoor, Telford, Shropshire TF4 3BR. Tel: 0952 595436
Computer Music Systems: 17 Waterside Business Centre, Railshead Rd, Isleworth, Middx TW7 7BY. Tel: 081 758 0311
Creative Sounds: PO Box 877, Bristol, Avon BS99 5LA. Tel: 0272 244395
Datamusic: 57 Cricketfield Rd, Hackney, London E5 8NR. Tel: 081 985 5268
Desert Software: PO Box 123, St Helens, Merseyside WA9 5LD. Tel: 051 430 7400
The Digital Muse: 82 Tachbrook St, London SW1V 2NB. Tel: 071 828 9462
Digital Music: 27 Leven Close, Chandlers Ford, Hants SO5 3SH. Tel: 0703 252131
EMR: 14 Mount Close, Wickford, Essex SS11 8HG. Tel: 0702 335747
E-mu: Suite 6, Adam Ferguson House, Eskmills Ind Park, Musselburgh EX21 7PQ. Tel: 031-653 6556
Evenlode Soundworks: The Studio, Church Street, Stonesfield, Oxford OX7 2PS. Tel: 0993 898484
Fostex: Jackson Way, Great Western Ind Park, Southall, Middx UB2 4SA. Tel: 081 893 51111
Four Minute Warning: 298 Horbury Road, Wakefield, West Yorkshire WF2 8QX. Tel: 0924 386527
Fractal Music Ltd: PO Box 1938, Hornsey, London N8 7DZ. Tel: 081 340 1871
Gajits Music Software: 40 Princess Street, Manchester M1 6DE. Tel: 061 236 2515
GemWorkS Europe: 46 Hampton Close, Herne Bay, Kent CT6 8BZ. Tel: 0227 742790
GFA: Box 121, Wokingham, Berks RG11 5XT. Tel: 0734 794941
Harman Audio: Mill Street, Slough Berks SL2 5DD. Tel: 0753 576911
HB Marketing: Unit 3, Poyle 14, Newlands Drive, Coinbrook, Berks SL3 0DX. Tel: 0753 686000
Hollis Research: Tel: 0703 891797
Impac Resources Ltd: Unit 4B, Thornton Ind Estate, Pickering, North Yorkshire YO18 7JB. Tel: 0751 77456
Intrinsic Technology: 4 Auckland Court, London SE27 9PE. Tel: 081 761 0178
John Hornby Skewes: Salem House, Parkinson Approach, Garforth, Leeds LS25 2HR. Tel: 0532 856381
Kawai UK: Sun Alliance Hse, 8–10 Dean Park Crescent, Bournemouth, Dorset BH1 1HL. Tel: 0202 296629
Key Audio: Unit C, Robjohns Road, Chelmsford, Essex CM1 3AG. Tel: 0245 344001
Keynote Music Software FREEPOST, Radstock, Bath BA3 3YA. Tel: 0761 432610
Korg: 8/9 The Crystal Centre, Elmgrove Road, Harrow, Middx HA1 2YR. Tel 081 427 5377
Kurzweil: c/o Washburn UK, Letchworth, Herts SG6 1UG. Tel: 0462 482466
Ladbroke Computing: 33 Omskirk Road, Preston, Lancs PR1 2QP. Tel: 0772 203166
MCMXCIX: 708A Abbey Road, Tudor Estate, London NW10 7UW.Tel: 081 963 0663
Microdeal: PO Box 68, St Austell, Cornwall PL25 4YB. Tel: 0726 68020
Newtronic: 62B Manor Avenue, London SE4 1TE. Tel: 081 691 1087
Novation: Peerland Hse, 40-42 Chapel St, Marlow. Bucks SL7 1DD. Tel: 0628 481992
Oberheim: c/o The Synthesizer Company, 9 Hatton Street, London. Tel: 071 258 3454
Patchworks: Frederick House, 211 Frederick Road, Hastings, East Sussex TN35 5AU. Tel: 0424 436674
Peavey (UK): Hatton House, Hunters Road, Corby, Northants NN17 1JE. Tel: 0536 205520
PC Services: 78 Beckenham Road, Beckenham, Kent BR3 4RH. Tel: 081 658 7251.
Plasmec Systems: Farnham Business Park, Weydon Lane, Farnham, Surrey GU9 8QL. Tel: 0252 721236
Quinsoft: PO Box 68, Tadworth, Surrey KT20 7EP. Tel: 0737 243066
Roland (UK): Atlantic Close, Swansea Enterprise Park, Swansea, West Glamorgan SA7 9FJ. Tel: 0252 816181
Stirling Audio: Stirling House, Kimberly Rd, London NW6 7SF. Tel: 071 624 6000
Sony Pro Audio: Jays Close, Viables, Basingstoke, Hampshire RG22 4SB. Tel: 0256 483666
Sound Technology: Letchworth Point, Letchworth, Herts SG6 1ND. Tel: 0462 480000
Syntec: 54 Chelea Close, Hampton Hill, Middx TW12 1RS Tel: 081 941 4425
Tascam: TEAC UK, 5 Marlin House, The Croxley Centre, Watford, Herts WD1 8YA. Tel: 0923 819630
Technics: Panasonic UK (EMID), Willoughby Road, Bracknell, Berkshire RG12 8FP. Tel: 0344 853174
Titan Designs: Institute of Research and Development, University of Birmingham Research Park, Vincent Drive, Birmingham B15 2SQ. Tel: 021 415 4155
Tonality Systems 18 Park Avenue, Denby Dale Road, Wakefield, West Yorks WF2 8DS. Tel: 0924 383017
Yamaha-Kemble: Sherbourne Drive, Tilbrook, Milton Keynes MK7 8BL. Tel: 0908 366700
Zone Distribution: Unit 70, Eurolink Business Centre, 49 Effra Road, London SW2 1BZ Tel: 071 738 5444

CONTROLLERS

Note: Includes keyboards, guitar controllers, wind controllers, breath controllers, trigger interfaces and drum pads.

MANUF	MODEL	£ (inc VAT)	TYPE	DESCRIPTION
Akai	ME 35T	269	Audio-MIDI trigger	Receives an input either from drum pads or acoustic drums via a mic and converts them into MIDI messages.
Akai	MX1000	1,199	Keyboard	Fully programmable MIDI keyboard which, with the the PM76 piano card (£499), turns into a full digital piano.
Cheetah	Master Series 550	399	Keyboard	Synth-action 61-key version of the 770.
Cheetah	Master Series 770	899	Keyboard	88 piano weighted keys to give synth sounds an expressive feel.
Novation	MM10	149	Keyboard	Convenient portable two octave controller for Yamaha's tiny QY10 sequencing workstation.
Peavey	PC-1600	329	Table unit	Programmable controller – 100 scene memories, 50 pre-sets.
Q-Logic	K..AT	79	Table unit	14-function remote controller for Atari ST computers.
Q-Logic	Mac K..AT	110	Table unit	21-function remote controller for Apple Mac computers.
Roland	PC-150	139	Keyboard	Aimed at the computer music market, this keyboard is the perfect companion to the CM sound modules.
Roland	PC-200GS	247	Keyboard	Advanced version of the PC-150 with modulation, pitch blend and a data-entry slider.
Roland	A-30	535	Keyboard	26-note mother keyboard with velocity sensitive keys.
Roland	AX-1	535	Keyboard	45-key unit, M-ROS compatible.
Roland	SD-35	759	Rack	MIDI File player with built-in Sound Canvas sounds .
Yamaha	QY20	POA	Portable	As for QY10, but with more memory and mini-keys.
Yamaha	QY10	272	Portable	Sequencer with [illegible]

EFFECTS, DIGITAL

Note: Includes rackmount and floor-panel effects units, including dedicated effects and multi-effects processors. Single-effect guitar pedals are not included.

MANUF	MODEL	SUPPLIER	£ (inc VAT)	TYPE	Number of Effects	Simult Effects	DESCRIPTION
Alesis	Microverb 3	Sound Tech	249	Multi	16	1	A straightforward combined reverb/delay unit with good pre-sets.
Alesis	Midiverb 3	Sound Tech	339	Multi	12	4	Rather thin on programmability, but MIDI control makes up for it.
Alesis	Quadraverb Plus	Sound Tech	499	Multi	16	4	Much the same as GT without distortion settings.
Alesis	Quadraverb GT	Sound Tech	599	Multi	22	4	Impressive and wide-ranging with virtually all the straight effects.
ART	Multiverb LTX	Harman	199	Multi	9	3	Good starting unit for those on a tight budget.
ART	SGX-LT	Harman	299	Multi	9	3	As LTX, but with added guitar effects.
ART	Multiverb Alpha 2	Harman	399	Multi	60	7	Good mid-range. A unique dial for entering data.
ART	MDC-2001	Harman	399	Multi	5	5	Studio processor featuring five effects which can all be combined.
ART	DRX-2100	Harman	499	Multi	60	10	Studio processor – big brother of Alpha.
ART	SGX-T2	Harman	499	Multi	70	12	As SGX-2000, but without the valve pre-amp.
ART	SGX2000	Harman	669	Multi	70	20	With valve pre-amp, this is aimed at the guitarist, featuring a wealth of quality effects.
ART	SGX Nightbass	Harman	669	Multi	70	20	As SGX 2000 but for bass players.
Boss	ME-6	Roland	299	Multi	6	6	A slick looking and good sounding floor unit for guitarists.
Boss	ME-6B	Roland	299	Multi	6	6	New version of the ME-6 for bass players.
Boss	SE-50	Roland	499	Multi	6	19	A small but impressive unit with good, clean sounds, including Vocoder.
Boss	ME-10	Roland	699	Multi	10	10	Advanced version of ME-6 with more effects and a built-in tuner.
Digitech	WP1D	JHS	199	Pitch Shifter	3	1	Good floor-based unit for adding chorus, pitch bend and note shifts to guitars.
Digitech	RDS-1000 Time Machine	JHS	209	Delay	9	1	Offers several delay and chorus effects (up to one second) but not much more.
Digitech	DSP 16	JHS	269	Multi	16	1	Easy to use machine, but a bit weak compared with others in its price range.
Digitech	RDS-4000	JHS	289	Delay	9	1	Four-second version of RDS-1000.
Digitech	RDS-8000	JHS	329	Delay	9	1	Eight-second version of RDS-1000.
Digitech	DSP 256XL	JHS	415	Multi	24	4	Well priced, with good design for taking on the road.
Digitech	GSP7	JHS	449	Multi	22	7	Basic guitar effects unit including pre-amp.
Digitech	GFX1	JHS	599	Guitar Multi	11	6	Limited frequency response range. Distortion suited to guitar sounds.
Digitech	Twin-tube Preamp	JHS	599	Multi	7	6	Combines two tube pre-amps with a handful of effects for a rich, full guitar sound.
Digitech	GSP21	JHS	799	Multi	24	10	Professional-sounding guitar effects unit with foot controller included.
Digitech	Vocalist	JHS	899	Harmoniser	5	5	Award-winning vocal harmoniser with a series of realistic voice effects.
Ensoniq	DP/4	Sound Tech	1,299	Multi	21	4	Extremely powerful and flexible.
Korg	A5 Bass	Korg	235	Multi	5	5	Floor-based unit with straight effects geared towards bass player.
Korg	A5 Guitar	Korg	235	Multi	5	5	Similar to A5 bass but geared to guitar.
Korg	A5 FX	Korg	235	Multi	5	5	A5 for keyboard players with a foot pedal unit.
Korg	A4GR	Korg	389	Multi	8	8	Unit for guitarist.
Korg	A4B	Korg	389	Multi	8	8	Unit for bass player.
Korg	A2	Korg	816	Multi	44	6	Cut-down version of A1.
Korg	A1	Korg	1,277	Multi	59	7	Lots of sounds, digital output and facility to design your own effects algorithms.
Lexicon	LXP1	Stirling	459	Multi	4	1	Additional programmer needed to access custom settings.
Lexicon	LXP5	Stirling	459	Multi	4	2	Two simultaneous sounds add depth, but still needs MRC programmer.
Lexicon	LXP15	Stirling	979	Multi	2	2	Easier to use than LXP1 nd LXP5, with impressive sound.
Lexicon	PCM 70	Stirling	2,099	Reverb/Delay	4	1	Ageing, but sounds impressive.
Lexicon	300 Digital effect system	Stirling	3,798	Multi	4	1	Good sound and super control plus digital I/O.
Lexicon	480L	Stirling	8,827	Multi	u	u	Studio digital effect system – two separate units, samples and processes audio signals.
Peavey	Univerb 2	Peavey	229	Reverb	2	1	A wide range of reverbs and a simple echo. A nice, rich sound.
Peavey	Addverb 2	Peavey	289	Reverb/Delay	5	1	Competent with few frills.
Peavey	Ultraverb 2	Peavey	319	Multi	6	4	600 locations for storing patches. Data can also be edited via MIDI.
Peavey	DSR1000	Peavey	305	Multi	5	5	A reverb unit, but more programmable than some in the range.
Peavey	Bass-Fex	Peavey	499	Bass Multi	22	8	Eight simultaneous effects for bass players, with flexible operation.
Peavey	Pro-Fex 2	Peavey	499	Guitar Multi	16	8	Aimed at the guitarist – slightly less powerful than Pro-Fex.
Peavey	SDR 20/20	Peavey	649	Multi	35	8	A mass of effects and an easy-to-use interface.
Peavey	Pro-Fex	Peavey	699	Multi	18	168	Massive flexibility with full level control over the 16 simultaneous effects.
Peavey	QFX 4x4	Peavey	919	Multi	20	5	Four DSR 1000 processors handling five effects – used separately or together.
Peavey	Multifex	Peavey	959	Multi	6	4	Contains four independent processors for a massive range of control.
Roland	RSP-550	Roland	799	Multi	10	5	Useful unit but lacks the class of some others in the price range.
Roland	R-880	Roland	1,659	Reverb	7	4	Difficult to manage, but very high-class reverb full of features.
Sabine	FBX-900	Shuttlesound	492	Anti-feedback	1	1	Single unit rackmount which eliminates feedback during live performance. Mono only.
Sony	DPS-D7	Sony	816	Delay	7	1	Serious professional unit with all the features of a high-end delay.
Sony	DPS-R7	Sony	934	Reverb	10	1	As D7, but with reverb effects.
Sony	DPS-M7	Sony	995	Modulator	10	1	Concentrates on effects like chorus, flange and pitch shifting, all done very well.
TC Elec's	TC2290	Amp Sounds	1,522	Delay/Mult	7	4	Advanced delay unit including ability to produce 3D sound movement.
Yamaha	R100	Yamaha	189	Reverb	1	1	Simple, straight unit with no frills.
Yamaha	EMP-100	Yamaha	268	Multi	2	6	Goof effects but difficult programming.
Yamaha	FX-500	Yamaha	385	Multi	10	8	Aimed towards guitarist, this unit loses out because of its lack of memory.
Yamaha	EMP-700	Yamaha	449	Multi	28	2	Loads of effects that can be organised in a very efficient manner.
Yamaha	FX-900	Yamaha	665	Multi	12	8	Expansion of FX-500.
Yamaha	SPX900	Yamaha	699	Multi	20	5	Updated version of SPX90.
Yamaha	SPX 1000	Yamaha	1,119	Multi	22	5	Good guitar effects and the ability to actually sample short sections.
Yamaha	REV5	Yamaha	1,399	Reverb	1	1	A good range of reverb effects make this a classic machine.
Zoom	9002	MCM	279	Guitar Mult	12	6	Bolts onto guitar giving good range of effects.
Zoom	9000S	MCM	299	Guitar Mult	5	5	Neat little table-top box with easy programming and decent sound.
Zoom	9120	MCM	449	Multi	20	3	Rack mount with advanced effects processor including two-second echo.
Zoom	9030	MCM	549	Multi	49	7	Half rack digital stereo multi effects.
Zoom	9200	MCM	2,349	Multi	31	12	Advanced reverb processor with four processors you can access separately or combined.

HOME KEYBOARDS – standard keys

Note: This section covers keyboards with normal-size keys.

MANUF	MODEL	£ (inc VAT)	SOUNDS	POLYPH	DESCRIPTION
Casio	CT-636	149	30	10	Extra octave and bank of 465 tunes, but not so many pre-set sounds and rhythms.
Casio	CT-840	169	100	16	Features a "Do-Re-Mi" guide for teaching you how to play.
Casio	CT-647	169	120	16	Built-in reverb, chord memory and a jukebox function that plays 40 tunes.
Casio	CT-657	179	110	12	Enables you to record up to 1,250 notes of a tune and edit the sounds.
Casio	CT-700	239	100	12	Bigger version of the CT-657 with MIDI and a touch-sensitive keyboard, but no sound editing.
Casio	CT-770	369	100	12	A great leap in price for not a tremendous amount more.
Kawai	FS640	199	100	12	Basic features including 30 rhythm patterns and auto-accompaniment.
Kawai	FS690	289	100	12	100 rhythms now, an 11-parameter synth section and a 3,500 note song recorder.
Kawai	FS730	229	100	12	Adds stereo output and dynamic touch response.
Kawai	FS750	289	100	12	Adds song recorder and pattern maker, plus dual sound variations.
Kawai	FS780	339	100	12	Adds registration memory, three-song recorder and arrangement expander.
Kawai	FS800	499	100	12	A more professional approach with this keyboard – modulation and pitch-bend wheels, plus advanced synth editing.
Kawai	FS2000	1,049	100	12	The Super Lab is a souped-up FS800 with disk drive and external input level mixer for total performance control.
Roland	E-15	599	128	24	First of Roland's crossover home keyboards with the GS format, 61 velocity-sensitive keys, reverb and chorus.
Roland	E-35	999	256	24	More powerful on-board speakers, an LCD display and eight drum kits.
Roland	E-70	1,399	256	24	Many more functions and features and a big 15W bass speaker on the top-of-the-range version.
Technics	KN550	599	100	32	Some gorgeous sounds and good polyphony makes this more than your average home keyboard.
Technics	KN650	899	200	32	Twice as many sounds as the 550 plus the facility to record your own songs into the keyboard's memory.
Technics	KN1000	1,549	120	32	Includes an 8-track sequencer and built-in disk drive.
Yamaha	PSR-100	129	100	-	The PSR-3 with stereo sound.
Yamaha	PSR-19	149	100	-	A bigger keyboard – five octaves – plus on-board reverb and echo.
Yamaha	PSR-200	199	100	28	AWM sampled sounds replace the FM ones. Keyboard percussion, chord memory and 50 accompaniment styles.
Yamaha	PSR-300	279	100	28	MIDI, touch-responsive keyboard and dual voicing added to PSR-200 spec.
Yamaha	PSR-400	389	100	28	Includes memories for song and voice data and a pitch-bend wheel.
Yamaha	PSR-500	489	100	28	Reverb effects such as hall and room added to PSR-400 spec.
Yamaha	PSR-600	699	100	28	Latest mid-price Yamaha has 103 accompaniment styles, disk drive.
Yamaha	PSR-SQ16	1,199	177	56	Bold hybrid between electronic keyboard and workstation. General MIDI, 16-track, sequencer, comprehensive effects.

HOME KEYBOARDS – small keys

Note: This section covers "mini-key" keyboards (usually for beginners).

MANUF	MODEL	£ (inc VAT)	SOUNDS	POLYPH	DESCRIPTION
Casio	SA-8	19	25	2	Tiny keys and short keyboard.
Casio	SA9	19	100	8	Smaller version of SA11. Available in black, red and green.
Casio	SA-11	29	100	4	Bigger keys, more sounds and greater polyphony.
Casio	SA-21	39	100	4	As SA-11 but with five drum pads.
Casio	KS01	49	10	2	Special design for young children's first keyboard.
Casio	MA-120	59	100	8	Four-octave keyboard and 100 pre-set rhythms.
Casio	MA-220	99	100	8	MA-120 expanded to include five percussion pads and 100-chord memory.
Casio	PA31	59	100	4	Like SA21 but with sampled sounds and variable pitch wheel.
Casio	KS02	79	8	3	Has ROM pack self-teach system.
Casio	MA-220	89	100	8	MA-120 expanded to include five percussion pads and 100-chord memory. Also 15 songs with minus-one play facility.
Kawai	MS210	101	16	10	Not many pre-set sounds, but 192 variations available.
Yamaha	PSS-50	39	100	8	Two and a half octaves, FM sounds and 19 rhythms.
Yamaha	PSS-190	59	100	8	Three octaves, four drum pads and stereo sound.
Yamaha	PSS-290	69	100	8	Four octaves plus transposition function and a chord memory.
Yamaha	PSS-390	99	100	8	Includes primitive, 7-parameter synth.

KEYBOARD SYNTHESIZERS

Note: This section includes all keyboard synths, including workstations.

MANUF	MODEL	SUPPLIER	£ (inc VAT)	TYPE	MULTIT	POLYPH	DESCRIPTION
E-mu	Proteus MPS	E-mu	1,295	Synth	16	32	High quality sounds and good effects make this a good performance keyboard.
Ensoniq	KS-32	Sound Tech	1,895	Synth	16	32	Machine with features of SQ-2 and piano weighted keys.
Ensoniq	SQ-1 Plus	Sound Tech	1,399	Synth	16	32	Powerful synth with 180 sounds and 24-bit effects, but only a velocity sensitive keyboard.
Ensoniq	SQ-2	Sound Tech	1,599	Synth	16	32	Adds aftertouch and 76 extra keys to SQ-1.
Ensoniq	SD-1	Sound Tech	2,345	Workstation	24	32	24-track sequencer and 24-bit effects make this an impressive sounding instrument.
GEM	WS1	Bluebridge	799	Workstation	16	32	As WS1D but without disk drive.
GEM	WS1D	Bluebridge	1,099	Workstation	16	32	Smaller keyboard than WS2 but with built-in disk drive.
GEM	WS2	Bluebridge	1,599	Workstation	16	32	Advanced workstation machine with high specification level.
GEM	S2	Key Audio	1,699	Workstation	16	32	Surprisingly useful with fully useable sequencer section.
GEM	S3	Key Audio	1,899	Workstation	16	32	Larger version of S3 with 76-note keyboard.
Kawai	K4	Kawai	919	Synth	8	16	Brilliant sounds including drums and effects at a bargain price.
Korg	M1	Korg	992	Workstation	8	16	Now outmoded by OW/1 range, still favourite with musicians.
Korg	Wavestation EX	Korg	1,495	Synth	16	32	One of most expressive synths available with more PCM sounds that its predecessor.
Korg	01/W	Korg	1,645	Workstation	16	32	Current flagship – uses same sound system as Wavestation Plus sequencer.
Korg	01/WFD	Korg	1,899	Workstation	16	32	Standard 01/W with built-in disk drive to store sound and sequence data.
Korg	01/WPro	Korg	2,450	Workstation	16	32	As WFD but with full-size 76-note keyboard.
Korg	T3 EX	Korg	2,450	Workstation	8	16	Portable 61-key version of T series.
Korg	01/Wpro-X	Korg	2,999	Workstation	16	32	Largest machine with 88-note weighted keyboard.
Korg	T2 EX	Korg	2,999	Workstation	8	16	Smaller version of T1 with 76-note keyboard.
Korg	T1	Korg	3,780	Workstation	8	16	88-note weighted keyboard, large memory, built-in drive and facility to load samples.
Kurzweil	K2000	Kurzweil	2,769	Workstation	16	24	Near classic Kurzweil sound in a more affordable system. Uses version 1.3 software.
Kurzweil	K2000S	Kurzweil	3,549	Workstation	16	24	Adds sampling option to K2000 – reads Akai, Ensoniq and Roland format disks.
Peavey	DPM 2	Peavey	999	Synth	16	16	Solid synth with good sounds – optional upgrade to include sequencer.
Peavey	DPM3-SE plus	Peavey	1,499	Synth	16	16	Adds disk drive, sequencer and 0.5Mb sample memory to DPM 2.
Roland	E-16	Roland	529	Synth	6	24	Bottom of a new range of low cost synths based on GS sounds.
Roland	E-36	Roland	789	Synth	6	28	As E-16, with greater polyphony and more features for beginners.
Roland	JV-30	Roland	985	Synth	16	24	Good solid machine aimed at basic sequencer use.
Roland	E-56	Roland	1,249	Synth	6	28	As E-36 but has 226 sounds and 64 user programs, plus more advanced song composer.
Roland	E-86	Roland	1,899	Synth	6	28	Top of the range, uses JV-80 sounds as well as a host of features.
Roland	JV-80	Roland	1,499	Synth	7	24	Limited multi-timbral voices limits sequencer use, but good sounds and editing.
Roland	JW-50	Roland	1,499	Workstation	16	24	Best suited to those wanting to create tunes and access sounds quickly.
Roland	JD-800	Roland	2,400	Synth	6	24	Brave attempt to return to analogue programming, but lacking in multi timbral voices.
Soltan	MS5	Bluebridge	1,749	Synth	9	35	Useful machine offering a mixture of sampled and synthesised sounds plus split keyboard.
Yamaha	SY35	Yamaha	599	Synth	16	32	Good entry-level keyboard with 120 voices.
Yamaha	SY85	Yamaha	1,499	Workstation	16	32	Easy to operate with wonderfully epic sounds.
Yamaha	SY99	Yamaha	2,499	Synth	16	32	Top of the range – bigger keyboard and better effects than SY77.

PERCUSSION, ELECTRONIC

Note: Includes drum machines and percussion modules.

MANUF	MODEL	SUPPLIER	£ (inc VAT)	TYPE	SOUNDS	DESCRIPTION
Akai	XR10	Akai	349	Drum machine	65	Fairly recent machine with 450 pre-set patterns.
Akai	MPC6011	Akai	1,899	Sampling drum machine	32	A combined sampler, drum machine and sequencer from the Akai-Linn collaboration.
Alesis	SR-16	Sound Tech	299	Drum machine	233	Superb samples, but they're all drum sounds..
Alesis	D4	Sound Tech	399	Module	500	A module with 12 trigger inputs for the 48kHz sampled sounds .
Boss	DR-550 Mk2	Roland	275	Drum machine	96	Update to the successful DR-550 with new sounds and styling.
Boss	DR-660	Roland	399	Drum machine	255	Great sounds with expressive if fiddly editing.
Cheetah	MD16	Cheetah	299	Drum machine	700	A vast number of sounds all accessible within each drum pattern.
Cheetah	MD16R	Cheetah	349	Drum machine	700	Rackmount version of above.
Cheetah	MD16RP	Cheetah	399	Drum machine	700	Rackmount version with inputs for direct connection to electronic drum pads.
E-mu	Percussion	E-mu	565	Module	220	Basic sounds combined into another 556 complex sounds plus performance algorithms.
Korg	S3	Korg	899	Drum machine	160	All the rhythm functions you'd expect along with an advanced sound creation section.
Roland	CR-80	Roland	499	Rhythm player	77	A pre-set rhythm machine utilising Roland's "feel" algorithms.
Roland	R-8 Mk2	Roland	799	Rhythm composer	77	Preset rhythym machine with "feel" algorithms plus over 200 sounds and large memory.
Roland	R70	Roland	645	Drum machine	242	Many of the sounds of the Boss DR-660 but also has superb editing options.
Yamaha	RY10	Yamaha	249	Drum machine	250	Good sounds, bass samples and built-in speaker make this a useful portable tool.
Yamaha	RY30	Yamaha	480	Rhythm programmer	174	Quality sounds sampled at 48kHz replayed at 22 bit definition, plus 100 useful pre-sets.

PIANOS, DIGITAL

Note: Included are full-size digital pianos, portable keyboards, acoustic with MIDI pianos, rackmount modules and sound-board add-ons.

MANUF	MODEL	SUPPLIER	£ (inc VAT)	TYPE	SOUNDS	POLYPH	DESCRIPTION
Akai	PG2	Akai	1,299	Upright	24	16	Features 24 S1000 piano samples for a very good sound.
Akai	PG5	Akai	3,599	Grand	24	16	Grand style piano with four-track MIDI recorder/player.
Casio	CPS50	Casio	599	Upright	10	16	76-note, semi-weighted keys. 2-song memory, 20-song demo library.
Casio	CPS60	Casio	699	Upright	30	12	Features full auto multi-accompaniment system with 64 rhythms.
Casio	AP3	Casio	1,199	Upright	6	16	Has seven tuning temperaments and variable keyboard scaling.
Casio	AP5	Casio	1,399	Upright	8	16	Built-in sequencer and card save ability.
Casio	AP7	Casio	1,699	Upright	8	16	Adds built-in CD player for "playing along" to AP5.
Clavinova	PF-P100	Yamaha	1,599	Portable	10	32	New sounds and MIDI bring the PF range up to date.
E-mu	Proformance	E-mu	349	Rack	15	16	Impressive module with good stereo sound.
E-mu	Proformance Plus	E-mu	399	Rack	32	16	More sounds than standard unit.
GEM	GPS2000	Bluebridge	4,399	Grand	24	16	Impressive with nice playing action and piano sound.
Kawai	MR120	Kawai	999	Upright	5	32	Basic 88-note keyboard model.
Kawai	CA800	Kawai	1,299	Upright	14	32	Adds extra sounds and split keyboard to 600 spec.
Kawai	MR210	Kawai	1,299	Upright	9	32	Adds dual tone and some effects to basic spec.
Kawai	CA500	Kawai	1,699	Upright	10	32	High quality, basic-spec unit with 30 rhythm patterns.
Kawai	CA600	Kawai	1,999	Upright	10	32	Adds higher-power amp to 500 spec.
Kawai	PV35	Kawai	2,595	Upright	25	32	High-spec, with split/dual keyboard, arrangement expander and built-in disk drive.
Korg	C15	Korg	1,199	Upright	5	16	Good piano with no frills.
Korg	C25	Korg	1,345	Upright	5	16	As C15 but with a few effects.
Korg	C35	Korg	1,550	Upright	6	16	Extra sound and sequencer over C25.
Korg	C45	Korg	1,752	Upright	10	18	More sounds than C35.
Korg	C55	Korg	1,999	Upright	10	32	Top of the range upright from Korg.

PIANOS, DIGITAL continued

MANUF	MODEL	SUPPLIER	£ (inc VAT)	TYPE	SOUNDS	POLYPH	DESCRIPTION
Kurzweil	MkX	Kurzweil	POA	Upright	86	32	Adds advanced auto accompaniment, disk drive and 8-track sequencer.
Kurzweil	Mk250	Kurzweil	POA	Grand	86	32	Grand version of Mk X.
Kurzweil	MK IV	Kurzweil	2,450	Upright	100	24	Features Kurzweil's classic range of piano samples.
Roland	HP1500	Roland	1,499	Upright	5	24	With advanced SA sound and three selectable touch types.
Roland	HP900	Roland	1,649	Upright	5	32	New basic piano.
Roland	HP900L	Roland	1,699	Upright	5	32	New basic piano – as HP900 but with a lid.
Roland	FP8	Roland	1,799	Portable	16	28	Good rock piano with good MIDI implementation.
Roland	HP1800	Roland	1,999	Upright	5	24	As 1500 but with rosewood cabinet and more power.
Roland	HP2800	Roland	2,385	Upright	6	32	As 1800 but with more sounds and balancing-type hammer mechanism.
Roland	HP2900G	Roland	2,469	Upright	6	24	Uprated version of 900 with built in GM sequencer and sound module.
Roland	HP3700	Roland	2,800	Upright	6	32	As 2700 but with better amplification.
Roland	HP3800	Roland	2,899	Upright	6	32	All features as 2800 but appearance of 3700, finished in walnut and enhanced output.
Roland	HP5700	Roland	5,198	Upright	7	32	Good performance and playing action.
Roland	HP7700	Roland	8,835	Grand	7	32	Superb digital piano with style and good sounds..
Technics	PX70	Panasonic	1,149	Upright	6	32	Basic piano featuring Technics' new sound generation system.
Technics	PX71	Panasonic	1,249	Upright	6	32	Features Technics' new sound system.
Technics	PX73	Panasonic	1,699	Upright	7	32	Built in sequencer and stereo samples add to 71 spec.
Technics	PR170	Panasonic	1,949	Upright	19	32	Less memory and less powerful amp only difference between this and bigger models.
Technics	PX74	Panasonic	1,999	Upright	10	32	More sounds and a set of speakers are further additions.
Technics	PR270	Panasonic	2,649	Upright	24	32	Less powerful than 370.
Technics	PR370	Panasonic	3,149	Upright	24	32	"Concert touch" key weighting and quality sounds make an impressive piano system.
Technics	PR5	Panasonic	7,499	Upright	24	32	Digital ensemble concert piano.
Yamaha	Disklavier MX80	Yamaha	4,999	MIDI Acoustic	1	-	Entry level into Disklavier series.
Yamaha	Disklavier MX100B	Yamaha	5,999	MIDI Acoustic	1	-	As MX80, but with improved styling and metronome.
Yamaha	MIDI Grand	Yamaha	11,000	MIDI Acoustic	1	-	Grand piano with MIDI retro-fit.
Yamaha	Disklavier DG1F	Yamaha	13,999	MIDI Acoustic	1	-	Great-sounding and wonderful-looking MIDI grand.
Yamaha	Disklavier DG2F	Yamaha	14,699	MIDI Acoustic	1	-	Larger DG1F.
Yamaha	Disklavier DG3E	Yamaha	15,700	MIDI Acoustic	1	-	Largest in the range.

RECORDERS, MULTI-TRACK

Note: Includes analogue cassette and reel-to-reel systems.

MANUF	MODEL	£ (inc VAT)	FORMAT	TRACKS	DESCRIPTION
Fostex	X18	289	Cassette	4	2-track simultaneous beginner's system with added bonus of MIDI sync.
Fostex	X28	369	Cassette	4	Impressive-looking 4-track with auto-rehearsing and eight-channel mixer.
Fostex	280	658	Cassette	4	Eight-channel mixer, auto punch in/out and the ability to use MTC sync controller.
Fostex	R8	1,551	Half-inch reel	8	High quality 8-track with full automation capabilities.
Fostex	G16S	4,298	Half-inch reel	16	High end 16-track with options for built-in sync.
Fostex	G24S	6,999	One-inch reel	24	Features Dolby S noise reduction and optional sync.
Sansui	WS-X1	1,299	Twin cassette	6	Eight-channel mixer, six-track cassette and second final mastering cassette, Dolby B and C noise reduction.
Tascam	Porta 05 HS	369	Cassette	4	Long-standing budget machine.
Tascam	424	499	Cassette	4	Excellent beginner's 4-track with loads of features for price.
Tascam	464	699	Cassette	4	A 6-track mixer with 4-track combined which can manage up to 12 inputs.
Tascam	134	1,190	Cassette	4	Rackmount 4-track machine, specifically for AV presentation. Runs at normal and double speed.
Tascam	644	1,099	Cassette	4	A full function mixer and MIDI-controlled tape recorder.
Tascam	238 Syncaset	1,299	Cassette	8	A breakthrough in technology when it was released and still a good machine.
Tascam	488	1,299	Cassette	8	8-track recording within more people's reach with all the Tascam features.
Tascam	238S Syncaset	1,499	Cassette	8	As above with Dolby S noise reduction.
Tascam	688	2,399	Cassette	8	All the features of the 644 with even more control for 8-track recording.
Tascam	TSR-8	2,399	Half-inch reel	8	High quality, flexible 8-track reel-to-reel.
Tascam	MSR-16	4,299	Half-inch reel	16	One of Tascam's more professional recorders with plenty of auto-record functions.
Tascam	MSR-16S	5,999	Half-inch reel	16	As above with Dolby S noise reduction replacing dbx.
Tascam	MSR-24	6,999	One inch reel	24	24-track version of above.
Tascam	MSR-24S	9,699	One inch reel	24	As above with Dolby S replacing dbx.
Yamaha	MT120	399	Cassette	4	Has rather unusual graphic equaliser instead of EQ and can be operated via RCM remote unit (£33).
Yamaha	MT3X	599	Cassette	4	Features dbx noise reduction, auto punch in/out and MIDI sync.

RECORDING, DIGITAL

Note: Includes DAT, digital mastering, direct-to-disk and digital multi-track recorders.

MANUF	MODEL	£ (inc VAT)	TYPE	FORMAT	TRACKS	DESCRIPTION
Akai	A-DAM DR 1200	6,799	Multi-track	Video 8	12	Meaty digital multi-track with extensive sync capabilities.
Akai	DD1000s	6,999	Disk recorder	Magneto Optical	4	Slave version of DD1000.
Akai	DD1000	7,750	Disk recorder	Magneto Optical	4	High quality master recorder and editor offering a lot of storage.
Akai	DD1000i	7,999	Disk recorder	Magneto Optical	4	Updated and more flexible version of DD1000.
Alesis	ADAT	3,499	Multi-track	S-VHS	8	Ground breaking digital multi-track thanks to expandability, flexible control and low price.
Fostex	D-20B	5,346	DAT recorder	DAT	2	Full featured recorder for professional use.
Fostex	PD2	7,578	DAT recorder	DAT	2	Fully professional portable DAT with full time code features.
Plasmec	ADAS ST	599	Disk recorder	Hard Disk	2	Low cost direct to disk system for Atari computers.
Plasmec	ADAS MC	997	Disk recorder	Hard Disk	2	Low cost direct to disk system for Mac computers.
Plasmec	ADAS SA	4,106	Disk recorder	Hard Disk	2	Stand alone version of ADAS for those without a computer. Memory expandable to 1Gb.
Roland	DM-80 4	5,235	Disk recorder	Hard Disk	4	Very controllable system as long as you buy all the extras.
Roland	DM-80 8	8,200	Disk recorder	Hard Disk	8	8-track version of 80 4.
Tascam	DA-P20	876	DAT recorder	DAT	2	Portable system based on DA-30.
Tascam	DA-30	1,199	DAT recorder	DAT	2	Rackmounted recorder with balanced inputs for professional applications.
Tascam	DA88	3,999	Multi-track	Hi8 video cassette	8	8-track using hi8 video cassettes.
Yamaha	DMR 8	POA	Multi-track	M20P cassette	8	Very extensive digital control and automation – used for CD mastering.
Yamaha	DRU 8	POA	Multi-track	M20P cassette	8	Recorder only version of DMR 8 which links with DMC1000 digital mixing console.
Yamaha	CBX-D5	POA	Disk recorder	Magnetic disk	4	4-track unit for use with Atari and Mac computers running Cubase.

SAMPLERS

Note: This section covers keyboard sampling systems as well as rackmount samplers.

MANUF	MODEL	SUPPLIER	£ (inc VAT)	TYPE	STANDARD MEMORY	DESCRIPTION
Akai	S-01	Akai	799	Rack	1Mb	16-bit, eight-voice low-cost machine.
Akai	S-950	Akai	1,199	Rack	750k	12-bit version of discontinued S900.
Akai	S-1100EX	Akai	1,799	Rack	2Mb	16-voice expander to run alongside a standard S1100 for 32-voice operation.
Akai	S-2800	Akai	2,199	Rack	2Mb	16-bit, 32-voice stereo with digital effects and two independent outputs.
Akai	S-3000	Akai	2,999	Rack	2Mb	16-bit, 32-voice stereo with digital effects and eight independent outputs.
Akai	S-1100	Akai	3,299	Rack	2Mb	Features 24-bit processing and full time-stretch facility.
Akai	S-2800	Akai	2,199	Rack	2Mb	16-bit, 32-voice stereo with digital effects and two independent outputs.
Akai	S-3000	Akai	2,999	Rack	2Mb	16-bit, 32-voice stereo with digital effects and eight independent outputs.
Cheetah	SX-16	Cheetah	799	Rack	512k	Very useable budget sampler. Also reads S-1000 discs.
E-mu	Emax 2	E-mu	1,810	Kbd/Rack	2Mb	Favourite in the USA, but features some rather over-complex editing functions.
E-mu	E3xp	E-mu	2,750	Rack	8Mb	Sample playback version of E3.
E-mu	Emax 2 – Turbo	E-mu	3,449	Kbd/Rack	8Mb	Features built-in 40Mb hard drive.
E-mu	E3sp Turbo	E-mu	4,129	Rack	32Mb	Advanced playback module with more memory and on-board 105Mb hard drive.
E-mu	E3	E-mu	8,748	Keyboard	8Mb	Extremely powerful sampler.
Ensoniq	ASR-10	Sound Tech	2,345	Keyboard	2Mb	Stereo in-out and time compression. 19-inch rackmount version also available.
Ensoniq	ASR-10R	Sound Tech	2,345	Rack	2Mb	Complicated to use but a superbly powerful sampling and digital effects unit.
Peavey	DPM SP	Peavey	899	Rack	2Mb	Good sample playback unit with very useful functions. Uses SPM SX (£325) to record samples.
Roland	DJ-70	Roland	1,799	Keyboard	2Mb	Performance-orientated workstation with DJ-style scratch dial.

SOUND MODULES

Note: This section covers all non-keyboard synth modules, including rackmount units, computer sound modules and workstations.

MANUF	MODEL	SUPPLIER	£ (inc VAT)	TYPE	MULTIT	POLYPH	DESCRIPTION
Cheetah	MS6	Cheetah	350	Rack	6	6	True analogue power, though limited polyphony and multi-timbrality.
Cheetah	MS800	Cheetah	199	Rack	-	15	Digital sampled waveform synth.
Ensoniq	SQ-R Plus	Sound Tech	849	Rack	16	32	Module version of SQ synths.
GEM	WS2 Module	GemWorkS	1,099	Tone module	16	16	Programmable voices, styles & effects; 128 registrations, multi-track seq & disk drive.
Kawai	K4r	Kawai	299	Rack	8	16	Module version of K4 synth.
Korg	Wavestation SR	Korg	980	Rack	16	32	Wavestation sounds in an affordable rack.
Korg	O3R/W	Korg	899	Rack	16	32	MIDI module as for 01/W but without sequencer.
Peavey	DPM-V2	Peavey	675	Rack	16	16	Module version of DPM 2 .
Peavey	DPM-V3	Peavey	839	Rack	16	16	Module version of DPM 3.
Peavey	Spectrum Bass	Peavey	279	Rack	4	8	200+ specialised bass sounds. Access via MIDI or front panel controls.
Korg	Wavestation A/D	Korg	1,521	Rack	16	32	Rackmount version of Wavestation with extra polyphony, memory and audio inputs.
Korg	01R/W	Korg	1,499	Rack	16	32	Rack version of 01/W synth.
Korg	M1 REX	Korg	1,634	Rack	8	16	M1 rackmounted plus additional sound memory.
Kurzweil	K2000R	Kurzweil	2,769	Rack	16	24	Module version of K2000 with SCSI and 10 inputs/outputs.
Oberheim	Matrix 1000	Oberheim	499	Rack	-	6	Fat sounds and easy to handle edit matrix but no multi-timbral mode.
Roland	CM-300	Roland	399	Tone module	26	24	Part of Roland's computer music set-up, conforms to Roland's GS standard.
Roland	CM-500	Roland	799	Tone module	16	24	Adds LA mode with 8-part multi-timbrality and 32-voice polyphony.
Roland	SC-55 Sound Canvas	Roland	699	Rack	16	24	Designed for use with Sound Brush MIDI filer and player.
Roland	SC-155 Sound Canvas	Roland	715	Tone module	16	24	New version of SC-55 with more buttons and sliders for greater control.
Roland	SC-33	Roland	799	Tone module	16	24	220 sounds from Sound Canvas family, supports GM/GS format for song data.
Roland	JV-880	Roland	799	Rack	7	24	Expanded module version of JV80.
Roland	JV-990 Super JD	Roland	1,445	Tone module	16	24	JD-800 synth power with new programming abilities, large expandable sound palette.
Roland	SC-7 Roland	Roland	273	Desktop module	16	24	Designed for use with PC or Apple computers, comprehensive processing capabilities.
Roland	GR-1	Roland	1,085	Tone module	5	24	Impressive – requires GK-2 synth driver (£135).
Soltan	MS3	Bluebridge	799	Tone module	9	35	Expander for MS5 synth – as MS4 but without keyboard split and combine facilities.
Soltan	MS4	Bluebridge	1,749	Tone module	9	35	Expander for MS5 synth – adds new sounds and processing capabilities.
Yamaha	TG100	Yamaha	349	Tone module	16	28	Budget sound source with PC/MAC interface and general MIDI spec.
Yamaha	TG500	Yamaha	999	Rack	16	64	100s of sounds and massive polyphony.
Zone	GMX-1	Zone	249	Tone module	16	20	Good-sounding budget unit. GM-style voice implementation, but not quite GM polyphony.

Software buyers' guide

To fit even more products in, we've re-organised the software section of the *Future Music* Buyers' Guide – with the added advantage that you won't have to trace a line across two pages to find the details you want.

Software is listed alphabetically within each category, because the same package is often available on several computer formats – so make sure that the package you're looking at is actually available for your computer. The categories are now arranged alphabetically, and they are:

- Composition and auto-accompaniment
- Educational
- Patch editors and librarians
- Sample editors and librarians
- Scorewriters
- Sequencers
- Universal editors and librarians
- Utilities and miscellaneous.

What each category includes is briefly explained next to the heading. If you can't find a package, check in related categories.

COMPOSITION AND AUTO-ACCOMPANIMENT

Note: This section lists programs which generate music. It includes algorithmic composition software which uses probabilities and random numbers to create music, auto-accompaniment software, and packages which use fractal mathematics to create musical variety.

NAME and current version	COMPUTER	MAKER	SUPPLIER	£ (INC VAT)	RAM REQ'D	DESCRIPTION
Band in a Box v5.0	Mac	PG Music	Zone	79	2Mb	Auto-accompaniment software. Creates five-instrument backing tracks in pre-set or user-defined styles.
Band in a Box v5.0	PC	PG Music	Zone	79	640kb	As Mac version above. Needs EGA, VGA, Hercules or compatible display.
Band in a Box v5.13	ST	PG Music	Zone	79	1Mb	As Mac version above. Runs in mono or colour.
DNA Groves	ST/Mac	Steinberg	Harman	99	–	"Groove" templates of modern hits – enables you to "mould" your tracks to top-ten tracks.
Drum the Composer v1.3	ST	Inspirator	Newtronic	45	1Mb	Algorithmic composition tool from Finland with MIDI plus monitor output. Runs in mono.
Feeling Partner v1.6	ST	JCD	Zone	149	1Mb	Auto-accompaniment software with built-in sequencing capabilities. Runs in high res.
Fractal Music v1.4	ST	Datamusic	Datamusic	65	500kb	16-track fractal music composition program with transform functions. MIDI file compatible. Mono or colour.
Fractal Music Composer	ST	Fractal Music	Fractal Music	65	500kb	Generates music from fractals according to rules set by user. MIDI file compatible. Mono or colour.
Jam Factory v2.01	Mac	Dr T's	Zone	119	–	Algorithmic composition using four virtual musicians. Needs a Mac Plus to run.
Lugwig	ST	Hybrid Arts	Atlantic	152.75	0.5Mb	Algorithmic composition program. Runs in mono or colour.
M v2.2.3	Mac,Am,ST	Dr T's	Zone	119	–	Algorithmic composition program.
Power Chords	PC	Howling Dog	Digital Music	69	640kb	Represents chords with icons you can place within song files for auto-accompaniment. Needs *Windows 3.1*.
Session Partner v1.3	ST	DVPI	Newtronic	149	1Mb	Powerful style-arrangement software (incl 13 instruments plus auto-accompaniment page). Runs in mono.
Session Partner v1.3	PC	DVPI	Newtronic	199	1Mb	As ST version above. Needs 486 running at 16MHz; *Windows 3.1*.
Styletrax	ST	Steinberg	Harman	99	–	Real-time auto-accompaniment software running eight parts.
Super Jam!	Amiga	Blue Ribbon	Zone	99	1Mb	Auto-accompaniment software with sequencing. Can use internal sounds. Needs *Workbench 1.3* or *2.0*.
Sybil	PC	GHS	Digital Music	106	640kb	Real-time performance software enabling multi-instrument improvisation. Needs *DOS 3.3* and hard disk.
Symbolic Composer v2.0	Mac	Tonality	Tonality	250	4Mb	Powerful composer's tool. Uses LISP programming language. Needs Mac Classic, hard disk.
Symbolic Composer v1.1	ST	Tonality	Tonality	250	2Mb	As Mac version above. Runs in mono, needs hard disk.
Tango	ST	Steinberg	Harman	199	1Mb	Up to six "virtual musicians" respond to music. Works like a real-time jam session. Runs in mono.
Upbeat v2.05	Mac	Dr T's	Zone	129	–	Algorithmic composition for drum parts.

EDUCATIONAL SOFTWARE

Note: These are packages which have been designed with education in mind, although many have their uses outside schools and colleges.

NAME and current version	COMPUTER	MAKER	SUPPLIER	£ (INC VAT)	RAM REQ'D	DESCRIPTION
Aura	Mac	C-Lab	Sound Tech	149	–	Ear-training software.
Aura	ST	C-Lab	Sound Tech	115	1Mb	Ear-training software. Runs in mono.
Adventures In Musicland	Mac	Dr T's	Zone	59	1Mb	Musical games based on *Alice in Wonderland*.
Composer Quest v1.1	PC	Dr T's	Zone	69	2Mb	Multi-media music game based on time travel. Needs VGA monitor, MPC (Multi-media PC), 4Mb.
Crescendo	ST	MPI	Zone	150	0.5Mb	Interactive progressive music study package – contains equivalent of eight years' study. Runs in mono.
The Ear	ST	Steinberg	Harman	49	0.5Mb	Ear training software. Runs in mono.
14 Contemporary Styles	ST,Mac,Am,PC	A D Gordon	Zone	17	0.5Mb	Combination of book, cassette and MIDI files.
Improviser	ST	Creative Sounds	Creative Sounds	95	0.5Mb	Creates improvised lines over 4-track Standard MIDI Files. Interactive in real time.
Jazz/Blues/Rock Beginners/Intermed.	ST,Mac,Am,PC	A D Gordon	Zone	17	0.5Mb	Combination of book, cassette and MIDI files.
Jazz/Blues/Rock Intermed./Advanced	ST,Mac,Am,PC	A D Gordon	Zone	17	0.5Mb	Combination of book, cassette and MIDI files.
Jazzchord	PC	Digisoft	Zone	59	–	Teaches about jazz chords.

EDUCATIONAL SOFTWARE continued

NAME and current version	COMPUTER	MAKER	SUPPLIER	£ (INC VAT)	RAM REQ'D	DESCRIPTION
Kappelmeister	ST	FMI	Zone	125	0.5Mb	A shell program for creating music instruction courses and educational programs. Colour or mono.
Midia v1.1	Mac	C-Lab	Sound Tech	85	1Mb	MIDI instruction and analysis.
Midia v1.1	ST	C-Lab	Sound Tech	65	1Mb	MIDI instruction and analysis. Runs in mono.
Music Mouse v1.05	Amiga	Dr T's	Zone	59	1.05	Performance software which translates movements of the mouse into MIDI messages.
Music Mouse v2.04	Mac	Dr T's	Zone	59	—	Performance software which translates movements of the mouse into MIDI messages.
Music Mouse v1.05	ST	Dr T's	Zone	59	0.5Mb	Performance software which translates mouse movements into MIDI messages. Colour or mono.
Notator Resource Pack v3.0	ST	Impac	Impac	65	1Mb	Mono sequencing introduction for schools; contains classroom worksheets. Needs *Notator*.
Rhythm Kit/Tunemaker	ST	Impac	Impac	58	1Mb	Bundle of easy rhythm-notation program and notation program with classroom worksheets. Mono.
Rhythm Kit/Tunemaker	PC	Impac	Impac	79	1Mb	As ST version above. Needs *Windows 3.1*.

PATCH EDITORS AND LIBRARIANS

Note: Most patch editors also function as librarians. Some are discontinued but still available while stocks last – universal/generic editors to some extent taken the place of device-specific packages. For a small set-up, though, the latter is often the least expensive option.

NAME and current version	COMPUTER	MAKER	SUPPLIER	£ (INC VAT)	RAM REQ'D	DESCRIPTION
Aftershape	ST	Y-Not	Newtronic	59	1Mb	MROS-compatible editor/librarian for Korg 03R/W. Applies *Shape* to 03R/W synths.
Alexis	ST	Y-Not	Newtronic	49	1Mb	MROS-compatible editor/librarian for Alesis D4 drum module. Editing, inc. drum/triggers set-ups.
Casio VZ1/10M Editor	PC	Big Noise	Digital Music	85	–	Editor for Casio VZ1 and VZ10M. Needs two drives; mouse recommended.
CZ Rider v3.0	ST, Amiga	Dr T's	Zone	89	0.5Mb	Editor/librarian for Casio CZ series. Runs under MPE multi-tasking environment.
Dr T D-50 Editor v3.0	ST, Amiga	Dr T's	Zone	89	–	Editor/librarian for Roland D50. Runs under MPE multi-tasking environment.
Dr T D-Series Editor v3.0	ST, Amiga	Dr T's	Zone	89	0.5Mb	Editor/librarian for Roland D-series. Runs under MPE multi-tasking environment.
Dr T D110 Editor v1.1	Mac	Dr T's	Zone	89	–	Editor/librarian for Roland D110.
Dr T D50 Editor v1.21	Mac	Dr T's	Zone	89	–	Editor/librarian for Roland D50.
Dr T K1 Editor v3.0	ST, Amiga	Dr T's	Zone	89	–	Editor/librarian for Kawai K1. Runs under MPE multi-tasking environment.
Dr T K5 Editor v3.0	ST, Amiga	Dr T's	Zone	89	–	Editor/librarian for Kawai K5. Runs under MPE multi-tasking environment.
Dr T Korg M1 Editor v2.01	ST, Amiga	Dr T's	Zone	89	–	Editor/librarian for Korg M1. Runs under MPE multi-tasking environment.
Dr T MT-32 Editor v1.2	Mac	Dr T's	Zone	89	–	Editor/librarian for Roland MT-32.
Dr T MT-32 Editor v3.0	ST, Amiga	Dr T's	Zone	89	–	Editor/librarian for Roland MT-32. Runs under MPE multi-tasking environment.
Dr T Matrix 6/1000 Editor	ST, Amiga	Dr T's	Zone	89	–	Editor/librarian for Oberheim Matrix 6 and 1000. Runs under MPE multi-tasking environment.
Dr T Proteus Editor v1.07A	ST, Amiga	Dr T's	Zone	89	–	Editor/librarian for Emu Proteus. Runs under MPE multi-tasking environment.
DX-Heaven v3.0	ST, Amiga	Dr T's	Zone	89	–	Editor/librarian for Yamaha DX synths. Runs under MPE multi-tasking environment.
DX1/TX81Z SoftWorkStation	ST	G C Geerdes	Newtronic	99	1Mb	Editor/librarian for Yamaha DX1 and TX81Z. Includes G C Geerdes' *1stTrack* sequencer. Mono.
DX9/DX21 SoftWorkStation	ST	G C Geerdes	Newtronic	99	1Mb	Editor/librarian for Yamaha DX9 and DX21. Includes G C Geerdes' *1stTrack* sequencer. Mono.
Edith	ST	Y-Not	Newtronic	59	1Mb	Editor/librarian for Yamaha SY55/TG55. Chance to explore deeper sound synthesis creatively.
EK/EM44 Editor/Manager	ST	G C Geerdes	Mewtronic	94	1Mb	Editor/librarian for EK/EM44 synths. Pkg includes free copy of G C Geerdes' *1stTrack* sequencer.
EMC E-mu Proteus	ST	EMC	AMG	75	1Mb	Editor/librarian for Emu Proteus. Comes with additional sounds. Runs in mono.
EMC Ensoniq VFX	ST	EMC	AMG	75	1Mb	Editor/librarian for Ensoniq VFX. Comes with additional sounds. Runs in mono.
EMC Kawai K1	ST	EMC	AMG	25	0.5Mb	Editor/librarian for Kawai K1. Comes with additional sounds. Runs in mono.
EMC Korg 01/W/R full editor	ST	EMC	AMG	99	1Mb	Editor/librarian for Korg 01/W/R. Comes with additional sounds.
EMC Korg 03/R full editor	ST	EMC	AMG	69	1Mb	Editor/librarian for Korg 03/R. Comes with additional sounds.
EMC Korg M1/M1R full editor	ST	EMC	AMG	85	1Mb	Editor/librarian for Korg M1/M1R. Comes with additional sounds.
EMC Korg M1/M1R/M3R	ST	EMC	AMG	55	1Mb	Editor/librarian for Korg M-series synths. Comes with additional sounds. Runs in mono.
EMC Korg M3R full editor	ST	EMC	AMG	69	1Mb	Editor/librarian for Korg M3/M3R. Comes with additional sounds.
EMC Lexicon LXP-5/1	ST	EMC	AMG	55	1Mb	Editor/librarian for Lexicon LXP-5 and LXP-1. Comes with additional sounds. Runs in mono.
EMC Lexicon PCM-70	ST	EMC	AMG	75	1Mb	Editor/librarian for Lexicon PCM-70. Comes with additional sounds. Runs in mono.
EMC Oberheim OB-8	ST	EMC	AMG	90	1Mb	Editor/librarian for Oberheim OB-8. Comes with additional sounds. Runs in mono.
EMC Roland D10/20/110	ST	EMC	AMG	55	1Mb	Editor/librarian for Roland D-Series synths. Comes with additional sounds. Runs in mono.
EMC Roland D50/D550	ST	EMC	AMG	30	1Mb	Editor/librarian for Roland D50 and D550. Comes with additional sounds. Runs in mono.
EMC Roland D70	ST	EMC	AMG	89	1Mb	Editor/librarian for Roland D70. Comes with additional sounds. Runs in mono.
EMC Roland JV-30	ST	EMC	AMG	55	1Mb	Editor/librarian for Roland JV-30. Comes with additional sounds.
EMC Roland JX1	ST	EMC	AMG	55	1Mb	Editor/librarian for Roland JX1. Comes with additional sounds.
EMC Roland U20/220	ST	EMC	AMG	55	1Mb	Editor/librarian for Roland U20/220. Comes with additional sounds. Runs in mono.
EMC Sound Canvas	ST	EMC	AMG	55	1Mb	Editor/librarian for Roland Sound Canvas machines. Comes with additional sounds.
EMC Yamaha SY22/TG33	ST	EMC	AMG	55	1Mb	Editor/librarian for Yamaha SY22. Comes with additional sounds. Runs in mono.
EMC Yamaha SY55/TG55	ST	EMC	AMG	55	1Mb	Editor/librarian for Yamaha SY55/TG55. Comes with additional sounds. Runs in mono.
ESQ-Apade v3.0	ST, Amiga	Dr T's	Zone	89	–	Editor/librarian for Ensoniq ESQ-1 and SQ-80. Runs under MPE multi-tasking environment.
Ensoniq SQ/ESQ Editor	PC	Big Noise	Digital Music	85	–	Editor for Ensoniq ESQ-1 and SQ80. Two drives needed, mouse recommended.
4-Op Deluxe v3.0	ST, Amiga	Dr T's	Zone	89	–	Editor/librarian for Yamaha four-operator FM synths. Runs under MPE multi-tasking environment.
Juno Editor v1.1	ST	Quinsoft	Patchworks	35	0.5Mb	Editor/librarian for Roland JUNO 1 and 2. Comes with 64 new sounds. Runs in colour or mono.
K4 Editor v1.12	ST	Quinsoft	Patchworks	49	0.5Mb	Editor/librarian for Kawai K4. Comes with 64 new sounds. Runs in colour or mono.
Kawai K1 Editor	PC	Big Noise	Digital Music	85	–	Editor for Kawai K1. Two drives needed; mouse recommended.
Kawai K1M Editor	PC	Big Noise	Digital Music	85	–	Editor for Kawai K1M. Two drives needed; mouse recommended.
Kawai K1/R Editor	PC	Big Noise	Digital Music	85	–	Editor for Kawai K1R. Two drives needed; mouse recommended.
Kawai K1/R SoftWorkStation	ST	G C Geerdes	Newtronic	89	1Mb	Editor/librarian for Kawai K1/R. Package includes free copy of G C Geerdes' *1stTrack* sequencer.
Kawai K4/R SoftWorkStation	ST	G C Geerdes	Newtronic	89	1Mb	Editor/librarian for Kawai K4. Includes G C Geerdes' *1stTrack* sequencer. Runs in mono.
Kawai R50 Editor/Manager	ST	G C Geerdes	Newtronic	59	1Mb	Editor/librarian for Kawai R50. Package includes free copy of G C Geerdes' *1stTrack* sequencer.
Korg M1/R Editor	PC	Big Noise	Digital Music	85	–	Editor for Korg M1 and Korg M1R. Two drives needed; mouse recommended.
Korg M1/R SoftWorkStation	ST	G C Geerdes	Newtronic	89	1Mb	Editor/librarian for Korg M1/R. Package includes free copy of G C Geerdes' *1stTrack* sequencer.
Korg M3R Editor	PC	Big Noise	Digital Music	85	–	Editor for Korg M3R. Two drives needed; mouse recommended.
Korg M3/R SoftWorkStation	ST	G C Geerdes	Newtronic	89	1Mb	Editor/librarian for Korg M3/R. Includes G C Geerdes' *1stTrack* sequencer. Runs in mono.
Korg T-Series Editor	PC	Big Noise	Digital Music	85	–	Editor for Korg T1, T2 and T3. Two drives needed; mouse recommended.
Lexicon LXP-1 Editor/Manager	ST	G C Geerdes	Newtronic	59	0.5Mb	Editor/librarian for Lexicon LXP-1. Runs in colour or mono.
Matrix 1000 Editor/Manager	ST	G C Geerdes	Newtronic	94	0.5Mb	Editor/librarian for Matrix 1000. Runs in colour or mono.
Matrix Editor	ST	Quinsoft	Patchworks	49	0.5Mb	Editor/librarian for Matrix 6, 6R and 1000. Comes with 100 new sounds. Runs in colour or mono.
Microwave SoftWorkStation	ST	G C Geerdes	Newtronic	89	1Mb	Editor/librarian for Microwave. Includes copy of G C Geerdes' *1stTrack* sequencer. Runs in mono.
MKS 70 Editor v1.01	ST	Quinsoft	Patchworks	79	0.5Mb	Editor/librarian for Roland MKS-70. 64 new tones and 64 new patches. Runs in colour or mono.
Prophet VS SoftWorkStation	ST	G C Geerdes	Newtronic	89	1Mb	Editor/librarian for Prophet VS. Package includes free copy of G C Geerdes' *1stTrack* sequencer.
Roland D-Series Editor	PC	Big Noise	Digital Music	85	–	Editor for Roland D5, D10, D20 and D110. Two drives needed; mouse recommended.
Roland D-Series SoftWorkStation	ST	G C Geerdes	Newtronic	89	1Mb	Editor/librarian for Roland D-series synths. Includes G C Geerdes' *1stTrack* sequencer. Mono.
Roland D50 Editor	PC	Big Noise	Digital Music	85	–	Editor for Roland D50. Two drives needed; mouse recommended.
Roland D50 SoftWorkStation	ST	G C Geerdes	Newtronic	94	1Mb	Editor/librarian for Roland D50. Includes free copy of G C Geerdes' *1stTrack* sequencer.
Roland D70 SoftWorkStation	ST	G C Geerdes	Newtronic	89	1Mb	Editor/librarian for Roland D70. Includes G C Geerdes' *1stTrack* sequencer. Runs in mono.
Roland MKS80 SoftWorkStation	ST	G C Geerdes	Newtronic	94	1Mb	Editor/librarian for Roland MKS-80. Includes G C Geerdes' *1stTrack* sequencer. Runs in mono.
Roland MT32/CM32/LAPC-1 Editor	PC	Big Noise	Digital Music	85	–	Editor for Roland MT32, CM32 and LAPC1. Two drives needed; mouse recommended.
Roland U110 SoftWorkStation	ST	G C Geerdes	Newtronic	89	1Mb	Editor/librarian for Roland U110. Includes G C Geerdes' *1stTrack* sequencer. Runs in mono.
Roland U20/U220 SoftW'kStation	ST	G C Geerdes	Newtronic	89	1Mb	Editor/librarian for Roland U20 and U220. Includes G C Geerdes' *1stTrack* sequencer. Mono.
Shape	ST	Y-Not	Newtronic	89	1Mb	MROS-compatible editor/librarian for Korg 01/W. Easy editing and sound management database.
Soundmaster SC55	ST	Newtronic	Newtronic	29	0.5Mb	Editor/librarian for Roland SC-55 Sound Canvas. Runs in colour or mono.
SQ80/ESQ1 Editor/Manager	ST	G C Geerdes	Newtronic	94	1Mb	Editor/librarian for Ensoniq SQ80/ESQ1. Includes G C Geerdes' *1stTrack* sequencer.
Synthworks Emu Proteus v1.2	ST	Steinberg	Harman	166	1Mb	MROS-compatible editor/librarian for Emu Proteus series. Runs in colour or mono.
Synthworks Kawai K1 v1.51	ST	Steinberg	Harman	166	1Mb	MROS-compatible editor/librarian for Kawai K1. Runs in colour or mono.
Synthworks Korg M1 v2.11	ST	Steinberg	Harman	166	1Mb	MROS-compatible editor/librarian for Korg M1. Runs in colour or mono.
Synthworks Korg Wavestation	ST	Steinberg	Harman	166	1Mb	MROS-compatible editor/librarian for Korg Wavestation. Runs in mono.
S'wks Rol'd D5/110/10/20/MT32	ST	Steinberg	Harman	166	1Mb	MROS-compatible editor/librarian for Roland D-series and MT-32. Runs in mono.
Synthworks Roland D50 v1.54	ST	Steinberg	Harman	166	1Mb	MROS-compatible editor/librarian for Roland D50. Runs in colour or mono.
Synthworks Yamaha DX/TX v3.02	ST	Steinberg	Harman	166	1Mb	MROS-compatible editor/librarian for Yamaha DX and TX synths. Runs in colour or mono.
Synthworks Yamaha SY77/TG77	ST	Steinberg	Harman	166	1Mb	MROS-compatible editor/librarian for Yamaha SY77 and TG77 synths. Runs in mono.
System 99	ST	Y-Not	Newtronic	129	1Mb	MROS-compatible editor/librarian for Yamaha SY99. Offers enhanced windows manipulation.
Turbo GS	ST	Mississippi	4 Minute	29	1Mb	Editor/librarian for Roland GS6 Guitar FX box. May be run as a Desk Accessory. Runs in mono.
U220 Editor	ST	Newtronic	Newtronic	49	0.5Mb	Editor/librarian for Roland U220. Offers enhanced window technique with excellent graphics.
Unison 220 v2.0	ST	Mississippi	4 Minute	59	1Mb	Editor/librarian for Roland U220. May be run as a Desk Accessory. Runs in mono.

PATCH EDITORS AND LIBRARIANS

continued

NAME and current version	COMPUTER	MAKER	SUPPLIER	£ (INC VAT)	RAM REQ'D	DESCRIPTION
VZ-ED v1.4	ST	Quinsoft	Patchworks	49	0.5Mb	Editor/librarian for Casio VZ series. Comes with 64 new sounds. Runs in colour or mono.
VZ Rider v2.0	ST, Amiga	Dr T's	Zone	89	0.5Mb	Editor/librarian for Casio VZ series. Runs under MPE multi-tasking environment.
VZ/HS SoftWorkStation	ST	G C Geerdes	Newtronic	94	1Mb	Editor/librarian for Casio VZ. Includes G C Geerdes' *1stTrack* sequencer. Runs in mono.
Wavestation SoftWorkStation	ST	G C Geerdes	Newtronic	89	1Mb	Editor/librarian for Korg Wavestation. Includes G C Geerdes' *1stTrack* sequencer. Runs in mono.
WinCanvas	PC	Dan McKee	Digital Music	39	640K	Editor/librarian for Roland SCC Sound Canvas, JV30, etc. Also comes with *WinJammer* for £79.
XE-8 Organiser v1.2	ST	Mississippi	4 Minute	39	1Mb	Editor/librarian for Akai XE-8. May be run as a Desk Accessory. Runs in mono.
Xpert 4 SoftWorkStation	ST	G C Geerdes	Newtronic	89	1Mb	Editor/librarian for Yamaha 4-op FM synths. Includes G C Geerdes' *1stTrack* sequencer. Mono.
Xpert 6 SoftWorkStation	ST	G C Geerdes	Newtronic	94	1Mb	Editor/librarian for Yamaha 6-op FM synths. Includes G C Geerdes' *1stTrack* sequencer. Mono.
Yamaha SY/TG77 SoftWorkStation	ST	G C Geerdes	Newtronic	89	1Mb	Editor/librarian for Yamaha SY/TG77. Includes G C Geerdes' *1stTrack* sequencer. Mono.

SAMPLE EDITORS AND LIBRARIANS

Note: The sample editors listed here are all capable of communication with an external professional sampling device.

NAME and current version	COMPUTER	MAKER	SUPPLIER	£ (INC VAT)	RAM REQ'D	DESCRIPTION
Alchemy v2.51	Mac	Passport	MCMXCIX	459	2Mb	Digital sample editor with SCSI support. Needs Mac Classic; hard disk recommended.
Alchemy Direct to Disk	Mac	Passport	MCMXCIX	TBA	–	Direct to disk version of *Alchemy* due soon.
Audioshop	Mac	Opcode	MCMXCIX	79	–	Sample editor and CD-ROM control. Needs Mac Plus, SE or 2; hard disk recommended.
AudioView	PC	Voyetra	CMS	99	2Mb	Digital sample editor running under *Windows*. Needs *Windows 3.1*.
Avalon v2.0	ST	Steinberg	Harman	299	1Mb	Supports more than 18 sampler types and incorporates sound synthesis facilities. Runs in mono.
Filemaster FD v3.2	ST	Mississippi	4 Minute	176	1Mb	Editor for S1000, S900, S950, Roland S330, S550, W30 and MMA Standard samplers. Runs in mono.
Filemaster QD v3.2	ST	Mississippi	4 Minute	66	1Mb	Editor for Akai S612, S700, X7000 and Roland S10 and S220. Runs in mono.
Genwave v1.1	ST	Hybrid Arts	Atlantic	152.75	1Mb	Complements the *Genedit* universal editor. Runs in colour or mono.
Panel Partner	Mac	Steinberg	Harman	199	–	Sample manager due soon.
Slam v1.1	ST	Intrinsic Tech	Intrinsic Tech	89	0.5Mb	Sample librarian and manager for Akai samplers. Runs in colour or mono.
Softsynth v2.1	ST	Digidesign	Sound Tech	273	0.5Mb	Sample synthesis software. Runs in mono.
Turbosynth v2.0	ST	Digidesign	Sound Tech	306	1Mb	Sample synthesis and digital processing. Runs in mono.
Universal Sound Designer	ST	Digidesign	Sound Tech	328	0.5Mb	Comprehensive sample processor. Supports most samplers. Runs in mono.
Virtual Wave v1.2	ST	Resotek	Resotek	99	0.5Mb	Sample synthesis and playback. Supports most samplers. Runs in mono.
Wave for Windows	PC	Total Beach	MCMXCIX	99	2Mb	Digitial sample editor running under *Windows*. Needs *Windows 3.1*.

SCOREWRITERS

Note: These packages range from simple programs designed to provide quick output of scores to fully-specified professional music publishing systems. Bear in mind that the quality of the results you can expect to obtain depends heavily on the printer you're using.

NAME and current version	COMPUTER	MAKER	SUPPLIER	£ (INC VAT)	RAM REQ'D	Staves per pg	DESCRIPTION
Composers' Mosaic v1.1	Mac	MOTU	Sound Tech	599	2Mb	–	Mark of the Unicorn's top notation package. Needs Mac Plus, hard disk, *Adobe Type Manager*.
Copyist Apprentice v1.68	Amiga	Dr T's	Zone	115	1Mb	16	Up to five pages per score. Comprehensive editing features. Can import MIDI files.
Copyist Apprentice v2.01	PC	Dr T's	Zone	119	640K	16	Entry-level *Copyist*. 5 page maximum score. Needs EGA, VGA, CGA, Hercules, hard disk, *DOS 2.1*.
Copyist Apprentice v1.7	ST	Dr T's	Zone	119	1Mb	16	Up to five pages per score. Comprehensive edit features. Can import MIDI files. Colour or mono.
Copyist DTP v1.68	Amiga	Dr T's	Zone	249	1Mb	16	Professional publishing – up to 100 pages per score. Supports laser and PostScript output.
Copyist DTP v1.7	ST	Dr T's	Zone	249	1Mb	16	Up to 100 pages per score. Laser and PostScript support. Runs in colour or mono
Copyist DTP v2.01	PC	Dr T's	Zone	319	1Mb	16	As ST version above. Needs hard disk; *DOS 2.1*.
Encore v2.52	Mac	Passport	MCMXCIX	459	–	64	Scorewriter, MIDI input, auto beaming. Needs Mac Classic, printer; hard disk recommended.
Encore PC v2.52	PC	Passport	MCMXCIX	459	2Mb	64	Publishing pkg with MIDI. Needs EGA, VGA, Herc or compatible, hard disk, *DOS 3.1, Windows 3.0*
Finale Fonts	Mac	Coda Music	MCMXCIX	59	–	–	Music fonts for *Finale*. Needs *Finale*.
Finale Macintosh v2.63	Mac	Coda Music	MCMXCIX	729	–	128	Music publishing pkg. Playback scores. Real-time MIDI input. Needs Mac Plus; hard disk; printer.
Finale Macintosh Academic	Mac	Coda Music	MCMXCIX	293	–	128	Special educator's edition of *Finale*. Needs Mac Plus (or equiv); hard disk; printer.
Finale PC v2.01	PC	Coda Music	MCMXCIX	729	2Mb	128	PC version of above. Needs EGA, VGA, Hercules or compat, hard disk, *DOS 3.0, Windows 3.0*.
Finale PC Academic v2.01	PC	Coda Music	MCMXCIX	293	2Mb	128	Special educator's *Finale*. Needs EGA, VGA, Herc or compat, hard disk, *DOS 3.0, Windows 3.0*.
Laser Music Processor	PC	CMS	CMS	149	0.5Mb	12	Laser printer support, but limited features. Runs on most screen configurations.
Masterscore 2	ST	Steinberg	Harman	285	1Mb	–	Steinberg's scorewriter – professional and versatile. Runs in mono.
Music DTP v2.1	ST	Take Control	Titan	305	1Mb	24	Notation with real-time MIDI input. Runs in mono.
MusicProse Mac v2.1	Mac	Coda Music	MCMXCIX	229	–	64	Cut-down version of *Finale*. Needs Mac Plus (or equivalent); hard disk; printer.
MusicProse Mac Academic	Mac	Coda Music	MCMXCIX	170	–	64	Educator's edition of *MusicProse*. Needs Mac Plus (or equivalent); hard disk; printer.
MusicProse PC v2.1	PC	Coda Music	MCMXCIX	170	2Mb	64	Cut-down *Finale*. Needs EGA, VGA, Herc or compat, 286; hard disk; *DOS 3.0; Windows 3.0*.
MusicProse PC Academic	PC	Coda Music	MCMXCIX	170	2Mb	64	Special educator's edition of *MusicProse*. Needs config specified above.
Musictime	Mac	Passport	MCMXCIX	199	–	6	Cut down version of *Encore*. Hard disk recommended; needs printer.
MusicTime PC v1.1	PC	Passport	MCMXCIX	199	1Mb	6	Cut-down *Encore*. Needs EGA, VGA, Hercules or compat, 286; hard disk; *DOS 3.1; Windows 3.0*.
The Note Processor v2.3	PC	Thought Proc'rs	CMS	229	640K	50	Comprehensive notation pkg. Reproduce ancient notation. Needs CGA, VGA, EGA or Hercules.
Proscore	PC	Digigram	Zone	199	–	–	Score-writing program.
Proscore v2.0	ST	Digigram	GFA	200	1Mb	27	Features a chord track with automatic chord recognition. Runs in mono.
QuickScore Deluxe v2.03A	PC	Dr T's	Zone	119	640K	16	Real-time MIDI input. Laser/PostScript support. Needs EGA, VGA, CGA or Herc; XT, AT or 386.
Score Edit	ST	Digital Muse	Digital Muse	40	0.5Mb	–	Score module for use with *Virtuoso* and *Prodigy* sequencers.
Score System v3.08	PC	Passport	MCMXCIX	899	1 Mb	unlim.	Publishing pkg. Needs EGA, VGA, Herc or compat; 286; hard disk; *DOS 3.1*; PostScript printer.
Showtune MFT	PC	Thought Proc'rs	Digital Music	49	–	12	Transcribes Standard MIDI Files into scores. Maximum of eight tracks input.
SongWright 5.1	PC	–	PC Services	116	512K	16	*DOS* scorewriter, laser printer support. Needs CGA, EGA or Hercules. Doesn't run under *Windows*.
Vivace Module 3	ST	Desert Sftware	Desert Sftware	90	1Mb	–	Score module for use with *Vivace* sequencer. Runs in mono.

SEQUENCERS

Note: The sequencer is at the heart of every MIDI system. This list includes sequencers with digital audio capabilities which require specific additional hardware.

NAME and current version	COMPUTER	MAKER	SUPPLIER	£ (INC VAT)	RAM REQ'D	Staves per pg	DESCRIPTION
AudioTrax v1.01	Mac	Passport	MCMXCIX	259.95	2Mb	64	64-track, with digital audio. Needs Mac 2, LC, SE30 or Classic 2; sound input device; 20Mb HD.
Ballade v2.5	PC	Dynaware	Digital Music	99	640K	9	For use with Roland MT32, CM32 or LAPC-1. Needs EGA, VGA; hard disk recommended
Bars&Pipes Pro v1.0e	Amiga	Blue Ribbon	Zone	379	1Mb	Unlim.	Wide range of MIDI options and the ability to integrate a host of Blue Ribbon tools.
Beyond 2.0 v2.1	Mac	Dr T's	Zone	199	1Mb	64	Graphic sequencing package from Dr T.
Cadenza 2.5 Rev 1	PC	Big Noise	Arbiter Pro	175	640K	64	Built-in SysEx librarian and live playback. Need CGA, EGA, VGA or Herc; Microsoft mouse r'cmded.
Cadenza for Windows	PC	Big Noise	Arbiter Pro	295	640K	Unlim.	*Windows* version of *Cadenza*. Now with score page. Needs 286; *Windows*.
Cakewalk v4.0	PC	12 Tone	Sound Tech	115	640K	256	Well-established mid-price sequencer. Needs hard disk.
Cakewalk Apprentice v4.0	PC	12 Tone	Sound Tech	115	640K	256	Entry-level version of *Cakewalk*. Needs hard disk.
Cakewalk Pro v4.0	PC	12 Tone	Sound Tech	189	640K	256	Powerful incarnation of *Cakewalk* with SMPTE and MTC support. Needs hard disk.
Cakewalk for Windows	PC	12 Tone	Sound Tech	299	2Mb	256	*Windows 3.1* version of *Cakewalk*, SMPTE and MTC. Needs IBM AT running at least 10MHz; HD;
Concerto v1.2	ST	Microdeal	Microdeal	39	0.5Mb	24	Budget sequencer with all essential features and a few more.
Creator SL v3.1	ST	Emagic	Sound Tech	259	1Mb	64	Sequencing-only version of *Notator*. Runs in mono.
Cubase v1.8.3	Mac	Steinberg	Harman	449	1Mb	64	Steinberg's flagship sequencer. Needs Mac Plus, SE, SE30 or 2; hard disk recommended.
Cubase v3.0	ST,PC	Steinberg	Harman	449	1Mb	64	Pro package noted for graphic song arrangement page and M-ROS multi-tasking system. Mono.
Cubase Audio Plus	Mac	Steinberg	Harman	769	4Mb	64	*Cubase* with digital audio. Supports Digidesign hardware. Needs Mac 2, CI, FX or Quadra.
Cubase Audio Plus	PC	Steinberg	Harman	769	4Mb	64	*Cubase* with digital audio, compatible with Yamaha direct-to-disk system. Includes *Cubase Score*.
Cubase Audio Plus	ST	Steinberg	Harman	669	4Mb	64	*Cubase* with digital audio, compatible with Yamaha direct-to-disk system. Includes *Cubase Score*.
Cubase Lite	ST,PC,Mac	Steinberg	Harman	99	0.5Mb	12	Steinberg's entry-level sequencer. Runs in mono.
Cubeat v2.0	ST	Steinberg	Harman	199	1Mb	64	Mid-price cut-down version of *Cubase*. Runs in mono.
Digital Performer v1.1	Mac	MOTU	Sound Tech	899	4Mb	–	*Performer* plus digital audio. Needs digital audio card; hard disk.
EditTrack Platinum v7.0	ST	Hybrid Arts	Atlantic Audio	100	1Mb	60	Mid-priced professional sequencer. Runs in colour or mono.
EZ Vision v1.01	Mac	Opcode	MCMXCIX	139	–	16	Entry level version of *Vision*.Needs Mac Plus, SE or 2; hard disk recommended.
1stTrack v2.2	ST	Geerdes	Newtronic	29	0.5Mb	24	Entry-level sequencer. Runs in mono.
GenEdit v2.0	ST	Hybrid Arts	Hybrid Arts	170	1Mb	24	Works with a number of sequencing programs to provide 200 different patches.
KCS Level 2 v3.57	Amiga	Dr T's	Zone	279	1Mb	48	Powerful multi-tasking sequencer with real-time mixing capabilities.
KCS Omega v4.0	ST	Dr T's	Zone	299	1.5Mb	48	Sequencer with notation, graphic editing, and multi-tasking.
MIDIstudio Junior v2.55	ST	Ladbroke	Ladbroke	29	0.5Mb	99	Budget phrase-based sequencer.

SEQUENCERS continued

NAME and current version	COMPUTER	MAKER	SUPPLIER	£ (INC VAT)	RAM REQ'D	Staves per pg	DESCRIPTION
MasterTracks Pro v4.51	PC	Passport	MCMXCIX	299	2Mb	64	PC sequencer. Needs EGA, VGA, Hercules or compatible; hard disk; *DOS 3.1; Windows 3.0.*
MasterTracks Pro 5 v5.02	Mac	Passport	MCMXCIX	379	–	64	Powerful, intuitive sequencer. Needs Mac Plus.
Musicator 2.5	PC	Musicator A/S	Arbiter Pro	599	640K	–	Notation-based sequencer, printout. Needs EGA w/256K RAM, VGA or Hercules; 286; 12MHz
Musicator GS	PC	Musicator A/S	Arbiter Pro	295	640K	16	Cut-down version of *Musicator*. Needs hard disk.
Musicator GS for Windows	PC	Musicator A/S	Arbiter Pro	295	–	–	*Windows* version of *Musicator GS*.
Music-X	Amiga	Software Bus	Software Bus	199	–	32	High-quality, well-featured sequencer.
Notator Alpha v1.1	ST	Emagic	Sound Tech	219	1Mb	16	Cut-down version of *Notator*. Runs in mono.
Notator Logic	Mac	Emagic	Sound Tech	499	2Mb	Unlim.	Entirely redesigned version of *Notator*.
Notator SL v3.1	ST	Emagic	Sound Tech	329	1Mb	64	Extremely powerful sequencing/notation pckg, supplied with Softlink multi-tasking system. Mono.
Overture	Amiga	Desert Sftwre	Desert Sftwre	79	–	16	Notation-based sequencer with 20 extra tracks for continuous controllers and tempo changes.
Performer v4.01	Mac	MOTU	Sound Tech	499	2.5Mb	Unlim.	Well-established Mac sequencing package. 4Mb needed under System 7.
Prism v1.5	PC	Dr T's	Zone	69	0.5Mb	16	Budget 16-track sequencer. Needs hard disk or 2 floppy drives.
Pro 24 v1.1	Amiga	Steinberg	Harman	227	1Mb	24	Very well-established 24-track sequencer.
Prodigy	ST	Digital Muse	Digital Muse	135	0.5Mb	32	Entry-level version of *Virtuoso*.
Rave	ST,Amiga	Digital Muse	Digital Muse	49	0.5Mb	32	Basic sequencer; includes Score Edit module.
Rave	PC	Digital Muse	Digital Muse	69	0.5Mb	32	As ST/Amiga versions above; needs *Windows 3.1*.
Realtime v1.1	ST	Dr T's	Zone	129	0.5Mb	Unlim.	Sequencer with built-in randomisation options.
Sequencer One v1.06	ST	Gajits	Gajits	89	0.5Mb	32	Budget sequencer.
Sequencer One Plus	ST	Gajits	Gajits	129	0.5Mb	32	Inexpensive sequencer with powerful graphic "Diamond Drag" editing feature.
Sequencer Plus Classic	PC	Voyetra	CMS	165	–	500	Well-specified PC sequencer. Supports SMPTE and MTC. Needs *DOS 3.0*.
Sequencer Plus Gold v4.10	PC	Voyetra	CMS	295	640K	2,000	*Sequencer Plus* with more features, inluding a universal patch librarian – and plenty of tracks.
Sequencer Plus Junior	PC	Voyetra	CMS	55	–	64	Entry-level version of *Sequencer Plus*. Needs *DOS 3.0*.
SMPTETrack Platinum v7.0	ST	Hybrid Arts	Atlantic	350	1Mb	60	Sequencer with hardware SMPTE unit supplied. Runs in colour or mono.
StarTrack (all)/Lite	ST	Geerdes	Newtronic	149	4Mb	Unlim.	Modular sequencing system. Runs in mono.
StudioVision v1.43	Mac	Opcode	MCMXCIX	849	4Mb	99	*Vision* plus digital audio. Inc *Galaxy* universal editor/librarian. Needs SE30, 2 or Quadra.
Tentrax	ST	Roland UK	Roland UK	99	0.5Mb	10	Ten-track sequencer designed for use with Roland MT-32 module. Runs in mono.
Tiger Cub v2.0	ST	Dr T's	Zone	99	1Mb	12	Powerful mid-price sequencer with graphic editing.
Trackman 2 v2.4	ST	Hollis	Hollis	99	0.5Mb	32	Easy-to-use package with footswitch punch in/out and extra MIDI In port options.
Trax PC v2.19	PC	Passport	MCMXCIX	89	2Mb	64	Entry-level *MasterTracks*. Needs EGA, VGA, or Hercules; 286; hard disk; *DOS 3.1; Windows 3.0.*
TurboTrax v2.2	Mac	Passport	MCMXCIX	99	–	64	Entry-level 64-track sequencer. Needs Mac Plus.
Virtuoso v2	ST	Digital Muse	Digital Muse	305	0.5Mb	99	Very fast and powerful modular sequencing system. Runs in mono.
Vision v1.41	Mac	Opcode	MCMXCIX	399	–	99	Powerful, very graphic sequencer. Needs Mac Plus, SE or 2; hard disk recommended.
Vivace Module 1	ST	Desert S'ftw're	Desert S'ftw're	234	1Mb	32	Notation-based sequencer. Runs in mono.
WinJammer	PC	Dan McKee	Digital Music	39	640K	64	Low-cost sequencer program. Needs *Windows*.

UNIVERSAL EDITORS AND LIBRARIANS

Note: A universal (or "generic") editor or librarian is a single piece of software able to communicate with many different devices.

NAME and current version	COMPUTER	MAKER	SUPPLIER	£ (INC VAT)	RAM REQ'D	DESCRIPTION
Chameleon v1.1	ST	Keynote	Keynote	99	0.5Mb	Desk Accessory universal librarian with free service enabling it to be configured for unusual instruments.
Galaxy v1.21	Mac	Opcode	MCMXCIX	199.95	–	Universal librarian compatible with over 135 instruments. Needs Mac Plus, SE or 2; hard disk rec'mdd.
Galaxy Plus Editors v1.21	Mac	Opcode	MCMXCIX	349.95	–	Universal librarian plus editors for certain instruments. Needs Mac Plus, SE or 2; hard disk recommended.
Lizard v1.10	PC	–	Zone	165	640K	Universal editor. Templates must be purchased separately.
Lizard v1.10	ST	–	Zone	165	1Mb	Universal editor. Templates must be purchased separately. Runs in mono.
Lizard Single	PC	–	Zone	35	–	*Lizard* cut down to edit a single device.
Lizard Single	ST	–	Zone	35	1Mb	*Lizard* cut down to edit a single device. Runs in mono.
MidiMan v1.4	ST	Hollis	Hollis	49.95	0.5Mb	Budget universal editor. Runs in colour or mono.
PC128	ST	Intrinsic Tech	Intrinsic Tech	19	0.5Mb	Desk Accessory sound organiser. Runs in colour or mono.
PatchMeister v1.0c	Amiga	Blue Ribbon	Zone	99	1Mb	Universal librarian which can be integrated into *Bars and Pipes Professional*.
PatchVision	ST	Intrinsic Tech	Intrinsic Tech	50	0.5Mb	Universal librarian Desk Accessory with search and sort options.
Polyframe v1.2	ST	Emagic	Sound Tech	299	1Mb	Professional modular editor, but supports limited number of instruments. Runs in mono.
Super Librarian	PC	Pixel Pub'ing	Digital Music	84.60	640K	Univ. librarian with DA for sending patches from within other applics. *GEM/3* software included.
X-Or v1.12	ST	Dr T's	Zone	219	1Mb	Powerful univ editor, search and sort facilities, can communicate with 125 devices. Hard disk rec'mded.
X-Or Amiga v1.3B	Amiga	Dr T's	Zone	219	1Mb*	As ST version above. Needs Amiga 500, two floppy drives or hard disk.
X-Or Mac v2.1A	Mac	Dr T's	Zone	259	1Mb	As ST version above. Needs Mac Plus, two floppy drives or hard disk.
X-Or PC v1.10E	PC	Dr T's	Zone	219	640K	As ST version. Needs EGA, VGA, Hercules or compat; *Windows 2.11* or *3.0*; AT (12Mhz or above) rec'mdd.

UTILITIES AND MISCELLANEOUS

Note: Utilities and oddities, plus some sampling packages.

NAME and current version	COMPUTER	MAKER	SUPPLIER	£ (INC VAT)	RAM REQ'D	DESCRIPTION
AMAS 2 v1.3	Amiga	Microsoft	Microsoft	99	–	Sampling package with MIDI interface. Microphone included.
Book of MIDI	Mac	Opcode	MCMXCIX	39.95	–	Hypercard stack explaining MIDI.
Boom Box	Amiga	Dr T's	Zone	39	1Mb	Simulates ghetto-blaster. Ability to add internal samples to rhythm tracks. Needs *Workbench 1.3 or 2.0*.
Boom Box	PC	Dr T's	Zone	39	640K	As Amiga version above. Needs EGA, VGA, Colour graphics, *DOS 3.0*; hard disk.
CD-Remix v2.0	C'dre CDTV	Microdeal	Microdeal	29	–	Enables chunks of CD sound to be played in any order. Can make extended "mixes" of recorded music.
Chord DA	ST	G Chapman	Zone	25	0.5Mb	Desk Accessory chord analyser. Play a chord and *Chord DA* tells you what it is. Runs in colour or mono.
Clarity 16	Amiga	Microdeal	Microdeal	149	1Mb	Stereo 16-bit sampler including hardware interface with option to control samples via MIDI.
Cubase Cue Trax Module	ST	Steinberg	Harman	99	1Mb	Film scoring *Cubase* module. Runs in mono; needs *Cubase*.
Cubase Studio Module	ST	Steinberg	Harman	99	1Mb	Universal librarian which works as an add-on to *Cubase*. Runs in mono; needs *Cubase*.
Cue v3.01	Mac	Opcode	MCMXCIX	549	–	Film scoring software. Needs Mac Plus, SE or 2; hard disk recommended.
DMP7 DTM	ST	Steinberg	Harman	399	1Mb	Mix automation software for Yamaha DMP7 digital mixer. Runs in mono.
Dr Tirric	ST	Intrinsic Tech	Intrinsic Tech	25	0.5Mb	Fun program. Runs in colour or mono.
Guitar Tabulator	ST	Frohlich	Zone	99	0.5Mb	Displays and plays back 3,000 guitar chords. Runs in colour or mono.
Keyboard Tabulator	ST	Frohlich	Zone	99	0.5Mb	Displays and plays back 3,000 chords. Runs in colour or mono.
MAX v2.2	Mac	Opcode	MCMXCIX	379	–	MIDI programming language. Needs Mac Plus, SE or 2; hard disk recommended.
MPLAN 24	ST	Intrinsic Tech	Intrinsic Tech	19	0.5Mb	GEM-based Desk Accessory track planner. Runs in colour or mono.
Maxplay	Mac	Opcode	MCMXCIX	99	–	Playback-only version of MAX. Needs Mac Plus, SE or 2; hard disk recommended.
Midigrid	ST	CDP	CDP	299	1Mb	Performance and composition software. Runs in mono.
Music Mandala	ST	DVPI	Newtronic	29	1Mb	Draws geometric Indian mandala patterns and plays the corresponding music. Runs in colour or mono.
Music Mandala	PC	DVPI	Newtronic	29	1Mb	As ST version above. Needs 386 and *Windows 3.1*.
PC Jukebox v1.1	PC	–	PC Services	35.25	512K	MIDI File player – probably the easiest way to play back MIDI Files. Inc. simple System Exclusive librarian.
PC Master Sound	PC	Microdeal	Microdeal	49	1Mb	8-bit software and hardware sampling package including programmable drum machine/sequencer.
Phantom	Amiga	Dr T's	Zone	275	1Mb	Bit-accurate SMPTE/MIDI interface.
Phantom	ST	Dr T's	Zone	199	1Mb	Bit-accurate SMPTE/MIDI interface. Runs KCS/realtime.
Producer	Mac	Passport	MCMXCIX	349	–	Multi-media integration package. Needs Mac 2, Quadra or Powerbook 140; hard disk .
Quartet v1.3	Amiga	Microdeal	Microdeal	49	–	Tracker software – enables sequencing of internal sounds.
Quartet v1.5	ST	Microdeal	Microdeal	49	0.5Mb	As Amiga version above. Runs in colour or mono.
Replay 8 v1.03	ST	Microdeal	Microdeal	59	0.5Mb	8-bit mono sampling package with option to play samples via MIDI. Runs in colour or mono.
Replay 16 v1.9	ST	Microdeal	Microdeal	129	0.5Mb	16-bit sampler with built-in drum sequencer. Runs in colour or mono; 1Mb recommended.
Replay Professional v1.02	ST	Microdeal	Microdeal	129	0.5Mb	12-bit software/hardware sampling package. Runs in colour or mono.
SMPTEKAL	ST	Intrinsic Tech	Intrinsic Tech	POA	0.5Mb	Time calculation utility for film scoring and jingle work. Runs in mono.
Stereo Master v1.3	Amiga	Microdeal	Microdeal	39	–	8-bit software and hardware sampling package.
Stereo Master v2.0	ST	Microdeal	Microdeal	39	0.5Mb	8-bit stereo sampling software/hardware package with option to control samples via MIDI. Colour or mono.
Stereo Replay v1.02	ST	Microdeal	Microdeal	89	0.5Mb	8-bit stereo sampling software/hardware package with built-in drum sample sequencer. Colour or mono.
Studio 16	Amiga	Sunrize	HB Marketing	399	–	16-bit sampling package supplied with soundcard. Mono sound only. Needs A2000 or A3000.
Switch Professional	ST	Sound Partner	GemWorkS	79	1Mb	GEM workstation Style, Song Pattern, Global and Voice editor. High-res preferred.
Time Bandit	Mac	Steinberg	Harman	399	–	Off-line time correction, pitch shift and harmonisation effects. Hard disk needed.
Trax v1.5	ST	Quinsoft	Patchworks	94	0.5Mb	Studio management software – four programs and two Accessories, inc tracksheet and accounting program.
Videomaster	ST,Amiga	Microdeal	Microdeal	69	1Mb	Combined video and audio sampling, editing and processing package – true multi-media.

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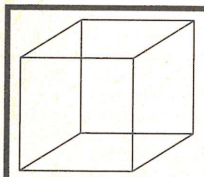

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KEYBOARDS

ARP Odyssey – £60, Korg monopoly – £60, Fender Rhodes – £160. All good condition. Telephone Alan on Strathclyde 0294 215205 after 4pm

Akai MX73 Master Keyboard and foot pedal – £270, evolution EVS-1 + editor disk – £180, Atari 1040STF and monitor and manuals £375, Roland TR-707 Drum Machine - £100, Yamaha MT1X – £195 or all for £900 ono. Telephone Neil on 0532 400375

Alesis Quadraverb, boxed, manuals – £200. Phone Kevin on 2060 853330

Amazing new Yamaha PRS SQ16: 3.5" disk drive and multitimbre sound module. 16 channel MIDI interface. Ideal keyboard for compsing. Boxed unused and under guarantee. retailed £1,300 bargain for quick sale £1,000 Telephone Ian Barraclough on 0332 757777 0r 081 471 8352

Analogue classic Korg MS10 monophonic modular synth, pure voltage controlled, smooth sound, pink and white noise generators plus many others I/0's – £180 or best offers. Telephone Jason on Huddersfield 0484 845233 after 6pm

Bargain – Atari 530 STE 2 Meg various software, mint condition Alesis SR-16 drum machine, as new with PSU – swop both for good multitimbral or porta-studio or cash. Telephone Andy on 0703 551582 anytime

Bargains – EVS1 MT32 sound modules and Korg SQD1 seq. Good condition all offers considered or swop for 4 track recorder and CD player. Telephone Chris on 0865 841657 after 6pm

C-Lab Creator ver 3.0 with dongle & manual. Mint condition, swop for keyboard F/X unit etc for Atari user). Offers Telephone Mark on 0244 547814

Casio C25000 with on-board 8 track sequencer, 8 part multitimbral, used by J M Jarre – £275 or swop for Roland PC200 and CM-32L or similar. Telephone James on Yorks 0484 065632 after 4pm

Casio CZ1000 synth with 'Z' stand and 2 books containing an extra 200 patches. Only home used – £150. Telephone Dave on Harrogate 0423 524092

Casio CZ5000 synth, 5 octave, chorus, 8 track sequencer – £150. Roalnd S.10 sampling keyboards, 4 octave, some disks and carrying case – £250 both excellent "Home use only" condition. Boxes & manuals Telephone Paul on Rochester 0634 831602 (eves)

Casio VZ-1 synth with 1 ROM and 1 RAM – £325, Roland RS-09 strings/organ – £80, sequential pro-one – £195. Telephone Chris on 0296 81379

Casio digital synth HT 3000 – good condition – £85 Phone Kevin on 0206 853330

DX27 MIDI keyboard for sale. Excellent condition, used twice. Full size keys, anolouge mono synth, good bargain for quick sale – £125. Telephone Russell Mitchelmore on 071 621 0700 (Day), 0268 691997 (Eves)

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Evolution EVS-1 probably the most underrated expander module. Inc. Atari editor and librarian – £160 Telephone DD Nowell on 0602 284985

Evolution EVS1 for sale. Includes Atari editing disk and manual. Home use only. Quick sale needed hence £180 – will consider swop for Alesis Midiverb/Microverb. Telephone Lloyd on 0268 490044 after 5pm

For Sale: Chroma Polaris 6 voice analogue synth, MIDI, 5 octave, sliders and knobs control – £400 or Part-Ex for ARP Odyssey, must be good condition, Yamaha DD11 drum pads – £60. Telephone Mr P McIntyre on 0469 576487 after 7pm

Hammond XB2 digitial drawbar organ, mint condition, cased – £800. Roland Rhodes 760 keyboar, 128 sampled sounds, 30 note ploy-phonic, multitimbral, excellent condition, cased – £500 no offers. Telephone John on 071 639 9633

Hammond organ sound module orla DE49 – £350 ono. Tel A Young on 0908 226191

Home studio sale: E-mu Proformance £165 & Proformance+ £200. Alesis D4 £260, Roland drum pads – full kit with stands – offers, Nakamich cassette deck 2 – £275. Telephone Ian on 061 442 6039

Juno-6 synth, slight damage, but works perfectly, Yamaha PS5-790 boxed with manual and PSU – £120 each or £200 for both. Contact J P Sawyer at 32 Churncote, Stirchley, Telford, Salop TF3 1YT

Kawai K1II 16 part multi timbral, built in effects, drums, 2 extra sound cards, excellent sounds. Boxed with manuals – £300. Telephone Ron on 086732 8226

Kawai K4 synth £325, memory card £25, F/case £25 or will swop for decent multi timbral synth module. Must be programmable – all excellent condition. Telephone Maurizo on 0202 301973

Kawai K4R. Stunning sounds on a low cost rack mount expander module – a real bargain – £250. Telephone DD Nowell on 0602 2849

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Korg M1 – good condition with programme cards and stand – £750 Telephone T. Hughes on Eastbourne 0323 721625 between 7 & 8pm

Korg M1, 4 data cards, stand & leads. Home used only, excellent condition, still boxed £600 ono Telephone Peter on 091 257 5744

Korg M1, flightcased, all manuals, two cards, good condition – £700. Also Roland MC500 MKII – 100,000 note sequencer, great for gigging, manuals, disks – £350 ono. Telephone Steve Brand on 0703 266181 office hours

Korg M1 Excellent condition – home use only £780

Korg M3r module with RE1 remote editor – £395, Kawai K1II with card – £295, Alesis MMT-8 sequencer – £140, all mint with manuals and boxes. Telephone Matt on 021 558 0610

Korg Poly 61 for sale with wide range of pre-programmed sounds. Fully programmable with eight-way joy stick. Worth £220, selling for £170 ono. Excellent condition – hardly used. Telephone Dan on 0962 733221

Korg M1 with manual – good condition £750 – Telephone Dave on 081 599 9736 between 6pm & 9pm

Miracle piano teaching system. Software for PC, Mac, Nintendo. Play piano in three weeks!! only £199. Telephone Martin on 0865 57089 (Eves)

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Proteus 1 module £350, Proteus 2 – £425, Midiverb II (No PSU) – £90, Music x 1.0 Amiga sequencer – £40. Telephone James on 021 475 9450

Proteus 1 – £395, E-mu Proteus 2 – £520, Boss SE50 effects – £200, Boss DR660 Drums – £220, Tascam 238 recorder – £600, E-mu performance piano – £180. Telephone Alan on 051 339 1167

Roland JX8P – good condition, flight case plus 2 RAMs – £395 or very near offer for quick sale – will deliver London area – Telephone Dave on 0666 822385

Roland SC-55 sound canvas. Boxed, manual, PSU, etc. As new – £300. Roland JX8P home use only – £100. Atari STE 1 MByte RAM, really professional sampler + other MIDI software – £150 Telephone Daniel on 0536 745714

Roland 3X-8P – £450, Ralnd SH-101 with grip – £120, Casio HZ-600 – £200, Yamaha DX100 – £100, Boss DR-110 – £50, excellent condition, never gigged, home use only. Telephone Mike on 0304 372209

Roland D-10 plus case & manuals, excellent condition, recently serviced, new switches and pitch bend – £425. Yamaha MT100 MkII – £275 (4-track) or both for £600. Telephone Chris on 0908 567842

Roland D-110 – £250, Roland D-5 – £325, both in good condition, boxed with manuals. Telephone Richard Westall on 0590 682535 or 0425 73261

Roland D-20 multi timbral synthesiser. 8 Track sequencer, Crystal card with further 64 sounds. All manuals, still with box. Home use only – Bargain at £450.00 . Telephone Graham on 0628 604763 evenings only.

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Roland D-10 with flight case – £425, TOA 8-track recorder with mixer – £450, 2 Simmons pads with stand – £110, MXR dual stereo compressor limiter – £120. Telephone Neil on 0268 510391

Roland D-110 module – £250 ono, Steinberg D-10 editor – £60, Roland TR626 drum machine – £75, Steinberg key (dongle) expander – £50. Wanted: Microwave wavepool disk – Telephone Kate on 0603 666701

Roland D-50 immaculate, 4 ROMs, 2 ST editors plus 2,000 sounds £500 or p/x for wavestation (will give £250 for difference). Korg M3R plus PCM set, ROMs, editor. 500 sounds – £350 – Telephone Mr J Poza on 081 641 6808

Roland D-50 syntheiser with two cards, manuals and semi-flight case – £500. Telephone S Warnett on Bedford 0234 213100

Roland D-70 + D-20 Celestion SR3s Boss BX-8 Mixer Klynstorm S.amp, home use only, extra sound cards etc, all manuals and other info – offers invited. Telephone Terry on o233 750 540 (eves)

Roland D-70 76 note keyboard in new condition with 258 E sound card and extra sounds – £800. Telephone Stanley on 0440 707610

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Roland MKS 80 Super Jupiter rackmount with MPG80 programmer – £1,800. Yamaha DX7 – £295. Roland SH09 analogue CU-Gate monosynth – £90. Casio CZ1000 – £80 all V.G.C. telephone Mr S Dyre on 0726 66715

Roland MT32 sound module. 128 sounds, stereo outputs and reverbs, complete with Atari ST editor program, saves edits and dumps to and from MT, good condition, Bargain – £195 Buyer collects Telephone Lee on Lancs 0204 693905

Roland MT32. Excellent condition including manual and PSU, ideal for computer use, great sounds – £180 no offers. Telephone Frederick on 0633 264051 daytime

Roland MT32 Great expander, 8 parts and drums, 32 notes polyphonic – £200. PC200 desktop MIDI keyboard 4 Oct, velocity sens – £120. Telephone Rudi on 0227 272455

Roland RA90 GS MIDI expander. Home keyboard in a small box! Home use only, brilliant sounds and arrangements. Telephone G Earle on 0924 240994

Roland SD800 – £1,100. MC500II - £650. TZEX – £1,500. M1 – £750. E600 – £900. LXP1+5 – £650. D=R Dayner 32 channel in-line console £3,000. Carlsbro Cobra 90 keyboard combo £150. PSION LZ64 – £100 all ono. Telephone Lee on 0252 871243

Roland SH7 mega analogue 2-OSC £350, Roland SH2 analogue 2-OCS – £200, Korg MonoPoly 4-OSC analogue – £300, Jupitor six – £700 (mint) Oberheim matrix 1000 plus explorer – £330. Steve 081 868 9527

SX1.6 sampler only 4 months old, very good condition – £325 or swop for any old Analogue synth. Quick Sale – going abroad. Please phone Jay on 0344 421271

Sequantial Circuits Pro One mono analog, as new, excellent sounds – £225 ono. Roland RE201space echo and reverb unit – £200 ono. Gordon smith GS1, superb sound – £175c/w. Telephone Andrew on 061 429 7086

Swop Korg T2EX and Pay £875 for Yamaha SY99. Must be mint, will deliver and collect: Telephone Terry on Norfolk 0553 617474

Synth sounds/editors: (M1, D10, K1, K4, U110, CZ, VZ, D50, SY77, T655, etc) Atari ST format. Sale of swop for sampling CD's. Also Casio FZ sample disks, huge library, quality sounds. Telephone now for list: Andy on 0532 430177

Technics AX7 MIDI workstation with RAM card, manuals. Home use only – £500 ono. Telephone A K Evans on 0724 864356

Technics KN800 keyboard, home used only, excellent condition with manuals and boxed – £600ono Telephone Gary on 0942 43689

Yamaha PSS 790 – excellent condition with manual MIDI compati-

ble, auto accomp eight track sequencer pitch bend – £130 061 775 4374

Yamaha DSR 1000 home keyboard, MIDI, 100 voices 40 user, 32 rhythms 16 programmable, sequencer recorder section, very good condition – £225 Telephone John on 0474 334230

Yamaha DX21 – £175, Yamaha ENT-10 £100, Kawai R-50e – £100, Casio CZ 1000 – £90, CZ 101 – £70, QZ21 – £50, 8 Channel mixer amp, 200w reverb, 10 band stereo graphic 12" cabs – £250. Prices negotiable. Telephone Matt on 0206 303355

Yamaha DX7 MkII, includes two ROM cartridges over 700 sounds on DX7II monster ROM package, with stand – £300. Telephone Mark on 0375 641526

Yamaha DX7 series one. Excellent condition complete with 5 ROM cartridges and carrying case – £250 ono. Telephone Mr H Thundow on Kent 0227 741517 after 7.30pm

Yamaha DX7IID with sustain and volume pedals. Two manuals – £400 or swop for Yamaha SY55 Telephone Matthew on 061 445 5406 afer 6pm

Yamaha Dx7 MkI two RAM cartridges, manual, breath contoller, two ROM cartridges, sustain pedal, music reat, flight case. Good condition – £350 or close offers. Call Mike on 0823 259787 (Answer Machine)

Yamaha KX remote keyboard, swop for one of the following: FX, Good 8ch mixer, mother keyboard, combo, Korg S3, 909, percussion, congos, nata's. W.H.Y. Telephone Neil on 0533 660227

Yamaha PSR 300 MIDI keyboard full sized keys, 100 sounds, 1,000 combinations. Great base keyboard for expanding from, or perfect home piano for the enthusiastic beginner only £160. Telephone N.P. Minogue on Somerset 0935 863523

Yamaha PSR 3500 full size MIDI keyboard, sequencer, rhythm, drum patterns (programmable) with good organ, strings, piano sounds. Ideal for beginner or as an expander. £160 ono. Telephone Graham Brown on Portsmouth 0705 254110

Yamaha PSR 6300 organ 1,300 – £375.00. Ecellent condition cost new £1,200 – hardley used – Telephone Mr Hunting anytime on Faversham 0795 535265

Yamaha PSS 680 keyboard. 61 mini keys built in synthesiser, programmable drum machine/pads. Can record five mono tracks. MIDI 100 sounds – stereo PCM 100 rhythms. Great fun – £125 ono Telephone Jamie on 021 476 0475

Yamaha SY22. Immaculate condition -as new – boxed with manual. Home use only – the sounds are superb – £375 Telephone James on 0533 550861

Yamaha SY55. Superb condition. 64 new voices + plug in drum sound/wave cards – £400 Telephone Dave on 021 426 2843

Yamaha SY77 synth. Immaculate condition with Waveform and R.A.M. cards, flight case and stand. Absolute bargain at £925 ono. Telephone Jason on Sheffield 0742 683573

Yamaha SY77, String ROM/PCM 20 ands on disk 4 on ROM cards, with manuals and book £799.00. Telephone Tim on 0222 388093 (eve's)

Yamaha SY85 – excellent contion, home use only – £995 ono, Yamaha MS205 monitor speakers – excellent condition £175 ono. Telephone Awn on 0222 618915

Yamaha SY85 Mega synth. 2 months old – £1,100 bills force sale! Card and discs inc Telephone Andy on 0205 361783

Yamaha TX416. Rare oppotunity to purchase the Yamaha DX7 studio version. 4 DX7 synthesisers in a rack mounted unit. Additional standard feature includes far superior output pre-amp and many more – £800 Telephone DD Nowell on 0602 284985

Yamaha V.50 Workstation. As new, still boxed with manuals plus additional sound disks – £550 ono – Telephone Bruse on Sheffield 480812

Yamaha V50 work station. Features: 3.5" disk drive, Touch/Velocity sensitive keyboard, 8 track real/step sequencer, advanced rhythm machine. Outstanding vaces. Absolutely as new – £450. No offers. Telephone G.A. Bridgman on Daventry 0327 706289

Yamaha YS200, 200 sounds, multi-timbral, 8 track sequencer 9 effects, touch sensitivity, after touch, ideal first work station, mint condition, PSU stand, boxed & manuals – £280 ono. Telephone Rob on 0782 395624

DRUM MACHINES

Alesis SR-16 drum machine. Boxed as new. Brilliant sound. Recession forces sale. – £150. Telephone Paul on 081 445 7919

Alesis SR16 drum machine for sale. Boxed, manuals etc. Two months old – £180. Telephone Tom on 0272 512737

Boss DR550 – £100 ono Telephone A Young on 0908 226191

Boss Doctor Rhythm 550, good as new and hardly ever used. Yours for only £100. Telephone Tim on 0225 461489 after 6pm

Kawai R50 drum machine plus extra CP2 sound chip – £110, Yamaha RX21L drum machine (latin sounds only) – £65. Telephone Pete on Surrey 0883 626971

Roland R8 Drum Machine. Immaculate condition, boxed, with manuals – £350. Telephone Richard on 0978 780620

Roland R8 Human Rhythm Composer, electric card, as new – £325 ono. Telephone Andy on 081 688 0233

Roland TR 909. Minty fresh condition with manual – £500. May deliver. Telephone Nigel on Glasgow 041 248 6254 between 5-7.30pm

Roland TR707. Excellent condition – £100 ono. Telephone James on Liverpool 51 724 3249 after 6pm

Roland TR808 classic drum machine. Groove MIDI interface fitted, good condition with manuals – £300 ono. Telephone Dave on 0244 683471

TR 505 Roland drum machine – £70 ono perfect working order, just needs a good home. Telephone Nigel on 0428 607304

Yamaha RX11 Drum Machine – £150, Yamaha RY30 Drum Machine, mint condition – £350. Telephone M Matthews on 0566 86417 (Cornwall)

Yamaha RX17 MIDI drum box. Excellent condition, manuals and PSU – £95 ono. Telephone R Derkin on Brighton 0273 207019 Also, Wanted FB01, TX81Z

RECORDING

Alesis quadraverb – £220, Seck 12:8:2 – £350, Notator (with manual and dongle) – £200, Unitor II – £140, Steady eye (VITC reader, for video sync) – £300. All ono. Telephone Nick 0533 707392 9am-9pm

Alesis quadraverb plus – £230, Fostex R8 – £850, Seck 18:8:2 mixer – £600, Kawai K1 Mk2 keyboard – £350, JBL control 5 monitors – £210, Alesis SR16 drums – £195. All boxed with manuals. Telephone Gary on 0525 873956

Art Multiverb Alpha 2.0 multi-fx unit. Over 60 effects, 7 at once, including sampling. Boxed, manuals, mint condition – £240 ono. Anater pocket MIDI filter. unused, still in wrapper – £30 Telephone Michael on 0752 268650

Digitech 256XL multi effects processor with remote, excellent condition, home use only, – £260. Also Teac A3440 reel to reel 4 track with RX9 DBX unit. Needs new record head, hence £125. excellent condition. Telepone Chris on 0904 626065

Fostex 280 for sale, good condition, 4 track – £350 Telephone D.N. Stead on 0302 770608

Frontline Digital delay sampler, as new – £70. Telephone S Parkin on 0827 53220

Mackie 1202 mixer, studio quality, 12 input mixer high quality mic inputs with Phantom power, very quiet with two band EQ still new – £280. Roland MT32 Synth module – £150. Telephone Paul on 021 360 7285

RSD Studiomaster 16:8:16:2 mixdown. Perfect condition, home use only – £1,200. Telephone D.D. Nowell on 0602 284985

Sony DATman digital recorder. A1 condition, all usual extras only £250. Telephone Gavin 0850 746125

Soundcraft Spirit studio consoles 16:8:2 both excellent condition – £1,500 each. Telephone Barry Simpson on 0224 633948 or 0224 781354

Studer B62 2 TRK recorder in trolley, mint – £350. Otari 5050 2 TRK recorder, mint – £350. MTR desk 12/8/2 dual channels – £650. Tascam 38 8 TRK recorder plus remote cables DBX – £795. Stereo gate – £150. Telephone R Turner on 0745 337546

Tascam 144 portastudio 4TRK. Great demo machine, new heads approx 1 year ago, £200 ono. Telephone Davy on 0506 632 568

Tascam 234 syncaset 4 track cassette recorder with manual – £350 ono. Telephone Paul on 061 432 3546

Tascam 38 half inch 8 track. Very little use, mint condition. Reluctant sale – £850. Telephone Tom on 051 722 6458

Tascam 6:2 mixer, parametric E.Q., stereo effects, returns, R1AA phono inputs, real faders, VUs etc. As new, boxed, manuals – £100. Telephone David on 071 978 9478

Technics SV260 portable DAT recorder pro model XLRs including power supply and re-chargable battery, needs attention so I will sell cheap or swop for anything reasonable – make me an offer. Telephone 0734 391681

Yamaha MT3x multi-track recorder, genuine brand new, boxed, never been used, superb – £440, also Roland Juno-6 synth with plush hard case, in excellent condition – £240. Telephone Howard on 081 342 0681

PERSONNEL

Any ambitious girls living in West Yorkshire who are interested in singing and dancing? Then would you like to form a group? Write to Tanya, Bastow, 93 Carrington Street, Bradford 3, West Yorkshire.

Audio engineer student seeks work experience in all aspect of sound recording inc "live sound". Willing to help out unpaid. Currently studying for City & Guilds. Please call anytime. Dean on 0273 694153

Australian techno musician would like to hear from other techo/dance, etc musicians for all over the world. Write to Matt Easton, 24 Taylors Road, Croydon, Victoria, Austalia 3136

Bands, singers, I'm hitting the big time. Come with me. Contact Robert on 021 786 2547

Business minded people who have thought about setting up own business, are needed to discuss possibility. Age 18-25, and plays an instument. Background, info, ideas to : Andrew Ponniah, 2 Twynham Avenue, Christchurch, Dorset. BH23 1QU

Cyberpunk guitarist wanted for seriously heavy techno/metal project. Southampton area based. Phone Luke on 0489 784567. Remember, attitude is everything.

Don't ring if you don't like dance. Don't ring if that's all you like. Singer(s), bass, keyboards. We're auditioning for the South East. Live song based band with big ideas. Telephone Dave on 0491 26554

Female vocalist available for recording/live work most evenings. Covered especially A.O.R. Telephone Gail on 061 799 6410

Greetings!! Guitarist seeks imaginative synth player for experimental ambient voyages. Influnces include: Tangerine Dream, Orb, Jarre, Floyd, Gong & more. Interested? Telephone Colin on 05242 21097 (evenings)

Hardcore piano DJ wants to get together with musicians with keyboards, samplers etc., to work on dance projects. Phone Lee on 0946 63937. London or Cumbria area

Help! I would like to borrow a synth or a voice box. If you can help please phone Mike on 0672 511859

I use my PC clone + D-10 + CM64 for home based sequencing and would like to hear from any PC users with similar interests – Telephone Jeremy on 0252 837917

If you make dance music but can't afford to make a demo or visit a studio, maybe I can help. Ring Glenn on Luton 0582 696317 between 6pm & 6.30pm. Available evenings only

Keyboard player wanted by Veyn to expand their original HARD rock sound without removing its edge. Think Killing Joke, Faith No More, Bowie, Stranglers. Own rehearsal and recording facilites. Ring Jem on 071 482 2538

Male student seeks part/full time work in recording studio. Has huge knowledge and experience of MIDI programming. Can also play keyboards. Contact Christian on 061 793 0686 after 5pm please

MIDI musicians required for forming techno/dance band. Influences: New Order, Bizzare Inc, 808 State. East Lothian/ Edinburge area. Telephone Derek on 062 082 5304

Multi skilled guitarist wanted. MIDI based composer needs guitarist to contribute to recording project in Coventry area – Various styles – sorry no money in it… Yet!!. Please contact Mike on 0203 679335

Multi-instrumentalist with equipment seeks others to work with especially vocalist. Please write with information to: Richard Hemmingway, 4 Meadlands, Appletree Villas, York YO2 2QP

Music Technology (Electronics & Music) student seeks summer work. Experience in audio industry. Any location possible. Unpaid work considered. Details available from Chris Thorne, Wentworth College University of York, Heslington, York. YO1 5DD or leave message with porter on 0904 433000

Musicians! Pay attention and take note of a new service enabling you to reach everyone in the business, at once, with one demo. No obligation, no commitment, just details. Telephone 0225 859839

Producers/Songwriters, seek trained Black/White female/male singers or rappers for projects in the field of swing-beat, R&B, soul and rap music. Telephone Quadcam on 0850 040 8241 or 0850 241 1382

S.O.S. Byorns Beenys required for covers, also with 90's veiw the name of the game. MIDI, MIDI, MIDI. Ring the girl with golden hair. 0449 774287 – 071 277 0549

Studio work wanted around Manchester or Liverpool area. Eager to learn, will work for free if need be. Telephone Lee on 0942 714268

Voluntary studio placement required by recent city and guilds engineer student. Sponser found for advanced level courses, but placement needed first. Keen to gain experience, serious about training. Telephone Trevor on 081 505 6643

Work experience placement wanted for 15 year old boy. Work in studio wanted. Telephone Mark on 081 882 6812

Young keen engineer has reached a "catch 22", several courses completed, urgently requires a willing studio for the essential studio experience needed to further career, voluntary, YTS, full time. Will travel. Telephone David on 0742 640386

SEQUENCERS

Notator V3 with manual and dongle plus C-lab exporter £200 inc P+P wanted C2 101 (cheap!) and reverb (with MIDI) phone Phil (0646) 693515.

Roland MC-50 new unused with manuals £350 ono, phone Andy on 021 350 4503.

Roland MC-50, boxed manuals, limited home use only, £400, also Roland D5 synth, £300, or both for £650. Chris 0285 851510 evenings (Cirencester).

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Steinberg Pro 24 (latest version) plus Atari one MByte STFM, with upgraded ROMs – excellent powerful sequencer system. All boxed, as new, complete with manuals. £280 ono. Phone Paul (after 6pm), (0386) 881524.

Steinberg Pro 24 sequencer for Atari, original manual and dongle. £35.00 Tel; (02230 415540.

Yamaha QY10 sequencer, manuals, PSU £150. Chelmsford 0245 358131.

SOFTWARE

Band in a box V5 Atari and IBM PC never used only £45 ea. Passport score for PC only £300 Tel 0865 57089 eves.

Band in a box, version 4 for Atari. Discs for 1040 and 5201 styles disc and manual boxed. £20 Dave 081 656 0434

Music X Sequencer boxed with manual plus MIDI interface Amiga £60 Tel 081 506 1970 evenings only.

Master tracks pro 64 track professional sequencing software for IBM PC's simply the best! £80 tel after 6.00pm Reading (0734) 722747.

Atari ST software Band in a Box V4.0 complete with manual and over 1,000 song files on disc £40 tel Andy 0905 351200. Wanted SEQ one upgrade with manual – fair price paid.

Cubase Mac 1.8.3 6 months old, as new £220. Jason Tel 061 788 0883.

Sequencer One Plus for Atari ST brand new boxed with manual £25 061 775 4374.

Amiga software GVP digital sound £20 inc sampler, audiomaster 4 £20 both genuine, boxed , excellent condition 0983 612537.

PC windows software Band in Box upgrade, ver 1 £25 Cubase Ver 1 £50. TRAX £20 lots of MIDI files all styles SAE to John 46 Rudgard ave, Lincoln LN3 4JG. Tel 0522 750 846.

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Amiga 500, 1 Megabyte, Star LC10 Colour Printer, ribbons, Naksha mouse, MIDI interface, Music X 1.1, Audio Engineer (sampler hardware, software, best available). Dpaint, Wordprocessor, Games. £450 phone Jim Bristol 0275 394384.

Amiga Sequencer software, 'Quartet', worth £50, will sell for £25 ono. Includes manual, samples disk, MIDI compatible, SAE for games, sample disks for sale. Grant Hughes, 8 Aylward close, Hadleigh, Suffolk IP7 5SJ.

Amiga musicians listen up! What could a gigabyte hard drive do for your sampling? This boots workbench in 9 seconds. Bailiffs at the door so make an offer. Ultimate system 0252 370550.

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Amstrad 1512DD 32 Mbyte Hard disk, mono monitor, 640k RAM with MPU401 MIDI Interface, Band in a Box Auto Accompaniment and Voyetra sequencer, only £300. Epson Printer £80. Call John on (0344) 483218 evening.

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Roland D5 + sound discs, Alesis Midiverb 3, Atari computer, SM124 monitor, sequencer one, all mint and boxed, Home use only, £725 ono. Tel: 0384 897512 after 6.30pm. Birmingham area.

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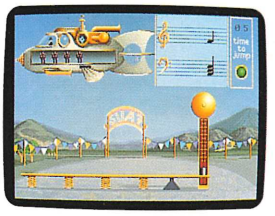

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